DOCUMENT RESUME

ED 146 179 TM 006 511

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TITLE Measuring Intelligence and Achievement Motivation in Surveys. Appendices 3-6. Describing Research Findings Supplementary to the Final Report to U.S. Department of Health, Education and Welfare, Office of Economic Opportunity.
INSTITUTION Michigan Univ., Ann Arbor. Survey Research Center.
SPONS AGENCY Office of Economic Opportunity, Washington, D.C.
CONTRACT OEO-4180
NOTE 106p.; For related documents, see TM 006 509 and 510

EDRS PRICE MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS Achievement; *Examiners; Expectation; *Factor Analysis; Goal Orientation; *Incidental Learning; Intelligence Tests; Interviews; *Motivation; *Privacy; *Race Influences; Racial Differences; Sex Differences; Socioeconomic Status; Testing
IDENTIFIERS *Picture Order Incidental Test; Test Anxiety

ABSTRACT

Appendix 3 to the report, Measuring Intelligence and Achievement Motivation in Surveys, describes a series of factor analyses of the achievement orientation measures, and a further analysis of strategies used in trying to interpret them. Also a tentative model for the components of achievement orientation is presented. Appendix 4 describes a Detroit survey, wherein black and white female interviewers were randomly assigned to black and white respondents of both sexes. Issues investigated include main effects and the interaction effects of interviewers' and respondents' race on measures of anxiety, achievement motivation, and intelligence. No interactions were found; rather, a pattern emerged with the black interviewers eliciting more refusals, shorter Thematic Apperception Test protocols, more positive and less negative projective achievement motivation imagery, a preference for lower risks, and higher intelligence test scores. No interviewer race differences were found on the objective achievement scales, or on anxiety. Appendix 5 presents investigations of (1) the differences between public and private responses to the Test Anxiety Questionnaire; and (2) the differences between explicit and implicit expectation settings on the subject's performance on the Digit Symbol Substitution Test. No significant differences were found in either study. Appendix 6 provides details of a study of the Picture Order Incidental Test which includes two memory tasks--"central", and "incidental". It was found that race-status groups do not differ in incidental learning.(MV)

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APPENDICES 3-6

Describing Research Findings
Supplementary to the
Final Report to

U.S. Department of Health, Education and Welfare
Office of Economic Opportunity
Contract No. OEO-4180

MEASURING INTELLIGENCE AND ACHIEVEMENT MOTIVATION IN SURVEYS

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October 1971

The research reported herein was performed pursuant to a contract with the Office of Economic Opportunity, Executive Office of the President, Washington, D.C. 20506. The opinions expressed herein are those of the authors and should not be construed as representing the opinions or policy of any agency of the United States Government.

TM006 511

APPENDIX 3

FACTOR ANALYSIS OF MEASURES OF ACHIEVEMENT ORIENTATION

TABLE OF CONTENTS

Page

APPENDIX 3: FACTOR ANALYSIS OF MEASURES OF ACHIEVEMENT ORIENTATION 1

Analysis Procedures 2
Factor Analysis of Achievement Orientation in White Males . . 10
Factor Analysis of Achievement Orientation in Black Males . . 18
Factor Analysis of Achievement Orientation in White Females . 25
Factor Analysis of Achievement Orientation in Black Females . 30
Relating the Factor Structures to One Another 36
Different Types of Personal Achievement Orientation: A Tentative Model 38

Affective Orientation to Success 38
Orientation to the Future 40
Cognitive Orientation to Success 42
Summary 48

LIST OF TABLES

Number	Title	Page
A3.1	Objective Response Items Included in the Factor Analyses Symbol, Abbreviation, and Actual Item Listed	3
A3.2	Projective Response Items Included in the Factor Analyses.	8
A3.3	Behavioral Responses Included in the Factor Analyses . . .	9
A3.4	Factors of Achievement Orientation for White Males; Measures with Loadings over .40 Listed	11
A3.5	Intercorrelations of Factor Scores based on Items with Over .40 Loadings (White Males)	15
A3.6	Correlations of Factor Scores with Achievement Variables, White Males	17
A3.7	Factors of Achievement Orientation for Black Males; Measures with Loadings over .40 Listed	19
A3.8	Intercorrelations of Factor Scores Based on Items with Over .40 Loadings (Black Males)	22
A3.9	Correlations of Factor Scores with Achievement Variables, Black Males	24
A3.10	Factors of Achievement Orientation for White Females; Measures with Loadings over .40 Listed	26
A3.11	Intercorrelations of Factor Scores based on Items with Over .40 Loadings, White Females	28
A3.12	Correlations of Factor Scores with Achievement Variables (White Females)	30
A3.13	Factors of Achievement Orientation for Black Females; Measures with Loadings over .40 Listed	31
A3.14	Intercorrelations of Factor Scores based on Items with Over .40 Loadings, Black Females	34
A3.15	Correlations of Factor Scores with Achievement Variables (Black Females)	35

Number	Title	Page
A3.16	Occurrence of Factor Scale, Significantly Predicting Achievement Variables, for Four Race-Sex Groups	37
A3.17	Classification of Types of Achievement Goals	42

APPENDIX 3

FACTOR ANALYSIS OF MEASURES OF ACHIEVEMENT ORIENTATION

The Detroit survey included many different measures of personal achievement orientation for a heterogeneous sample. This diversity in measures and in population gave us the unique opportunity to analyze our data in an attempt to discover the variety and patterns of personal achievement orientation that might underlie not only the achievement behaviors of a particular person, but also of different subgroups of the American population. We had, for each individual, questionnaire measures of achievement orientation, projective assessments of achievement orientation, and various behavioral indices of achievement orientation.

We chose to intercorrelate the various measures, and obtain from the correlations empirically defined clusters of measures to represent different dimensions which may be involved in conceptualizing the motivational bases of achievement. We especially hoped to find theoretically meaningful clusters including different assessment methods within them; we did expect, however, some "methods" clusters in which the communality represents an artifact of the methods used (i.e., projective, paired comparisons, etc.) rather than a critical psychological dimension.

The appendix will describe a series of factor analyses of the achievement orientation measures, and further analysis of strategies we used in trying to interpret them. Although various strategies were pursued, one in particular yielded the most interpretable set of results and will occupy the discussion herein: examination of different factor structures for the four race-sex subgroups; construction of scales from each structure, and exploration of the scales' relationships to each other and to some social status variables. This final step served to see if the scale indices had any heuristic value in generating meaningful results with measures other than those in the factor analyses from which they were derived. At the end of the Appendix we will present a tentative model for the components of achievement orientation that we feel are suggested by these analyses.

Analysis Procedures

All twenty-five two- and three-choice objective items reflecting aspects of achievement motivation were included in the analyses. These items appear on Table A3.1 grouped according to the style of question asked and its place in the interview. Comparison items (pc) are two alternative choices from pages 9 and 10 of the interview; Triads* (t) are three-alternative rank orders from pages 11 and 12; Interview Expectation items (ie) from page 26, asked the respondent his reactions to the interview situation itself; Personal Efficacy items (pe), from page 21, are items previously used in other studies to ask about the person's sense of personal efficacy. In addition, we included from the objective questionnaire items two summary indices of reported anxiety: an index of seven items tapping retrospective anxiety in test situations (p.anx.), page 14, and a second index, from page 27 of the interview, reflecting how anxious the person reported feeling during the interview itself (I anx). Table 1 lists the twenty-five items and two indices, their identifying symbols, and a shortened version of each to be used in reporting the factor structures.

A second type of measure included in the analysis was projective assessment. We included the achievement imagery coding of each of the four stories told in response to picture and verbal cues (pages 4-7 of the interview), and of the two completed sentences (page 8). These six measures are independent assessments of achievement orientation. We also included nine measures of various components of achievement orientation, each of which was constructed from the four longer stories (coding for these components is fully described in Appendix 2). These are thus not independent of each other or of the four aforementioned imagery codings. Table A3.2 lists all the measures derived from the projective method.

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*To avoid ipsative correlations, only one of the three alternatives for each triad was entered into the matrix. The choice was based on the frequency of choice of each alternative, and on the magnitude of the correlations generated by the alternatives with other achievement items.

Table A3.1

Objective Response Items Included in the Factor Analyses
Symbol, Abbreviation, and Actual Item Listed

Symbol	Abbreviation (Item)
	Paired Comparisons
pc1	Too little say so quit job/too much to decide on Suppose you were on a job and you were thinking of quitting. Why do you suppose you'd quit? Which of these would come closest to describing you? a. You had too little to say about how things got done, or b. You had too many things to decide about.
pc2	Too much competition so quit job/better worker Which of these two would come closer to describing why you might quit a job? a. Too much competition among workers on the job, or b. You were a much better worker than anyone else?
pc3	Job too difficult so quit/job no challenge How about these? a. The job was too difficult after all, or b. The job was not challenging anymore?
pc4	Plan for future/start fresh every day Now which of these two would describe what kind of work you like best? a. Work where you have to plan for the future and follow up on plans, or b. Work where you can start on something fresh every day?
pc5	Boss thought you did a good job/you did If you'd finished a hard job, which would you think about? a. Whether your boss thought you did a good job, or b. Whether you thought you did a good job?

Table A3.1 -- Continued

Symbol	Abbreviation (Item)
pc6	Weighty opinion/good neighbor Which would you rather overhear about yourself? a. His/Her opinion carries a lot of weight among people who know him/her, or b. People like to live next door to him/her.
pc7	Other people like him/can do whatever he wants Now these two. Which would you rather hear about yourself? a. Other people like him/her very much, or b. He/She could do anything he/she sets his/her mind on doing.
pc8	Can get others to act/hard work gets ahead Now these two... a. He/She can easily get other people to do things for him/her, or b. He/She is living proof that hard work gets a person ahead.
pc9	Ready to meet challenges/good friend Now these two... a. He/She is always ready to meet challenges that come his/her way, or b. He/She is a really dependable and loyal friend.
pc10	Party fun/gives important advice Now these two... a. He/She is fun to have at a party, or b. People like to go to him/her for advice on important matters.

The alternatives are listed here in the same order as in the interview. In the factor structures, all positively-correlated alternative choices within a factor will be listed together.

Table A3.1 -- Continued

Symbol	Abbreviation (Item)
	Triads
t1c	Want to do his best/stand up for own rights. be kind What would you like your child to do most? Which of the three would you least like him to do? a. Stand up for his own rights, b. Show kindness toward his playmates, c. Want very much to do his best.
t2a	Make friends easily/do as well as others, defend self How about these? Which of these would you most like your child to do? Which of the three would you least like him to do? a. Make friends easily, b. Do as well as most kids his age, c. Defend himself if attacked.
t3c	Do what teachers expect/plan ahead, not be weak How about these? Which of these would you most like your child to learn? Which of the three would you least like him to learn? a. To plan ahead for the future, b. Not to appear weak to others, c. To do what his teachers expect of him.
t4b	Be a leader/do what teacher expects, be popular How about these? Which of these would you most and least like to teach your child? a. To do the work his teacher expects, b. To be a leader, c. To be popular with his classmates.
t5b	Do better at what I try/more friends, get attention Which is truest for you? Which of the three is least true? a. I would like to have more friends, b. I would like to do better at what I try, c. I would like to have more people pay attention to my point of view.

Table A3.1 -- Continued

Symbol	Abbreviation (Item)
t6b	Lots of friends/no bosses, show real skills If you were to take a job -- maybe even something quite different from what you're doing now -- what would you most want? Which of these would you want least? a. A job where no one bosses you around too much, b. A job where you have a lot of friends, c. A job where you can show your real skills.
t7b	Nice group of workers/think for self, lots of say on job How about these aspects of a job? Which of these would you want most? Which of the three would you want least? a. A job where you had to think for yourself? b. A job where the people you work with are a nice group? c. A job where you have a lot to say in what's going on.
	Interview Experience
ie1	Compare self to others in nation/of own background What would you like to know most about the tests? a. How well you've done compared to most others in this country, or b. Just how well you have done for someone of your background?
ie2	Want to know more about tests/feel good Suppose I told you that you were doing very well on the tests. a. Would you want to know more about the tests, or b. Would you feel good about that?
ie3	Feel good/think of tests to come Suppose I told you that up until now you were doing very well on these tests. a. Would you mostly feel good about what you've done so far, or b. Would you mostly think about the tests yet to come?

Table A3.1 -- Continued

Symbol	Abbreviation (Item)
	Personal Efficacy
pe1	What happens is my own doing/not enough control over life a. What happens to me is my own doing. b. Sometimes I feel that I don't have enough control over my life.
pe2	Could decide by coin flip/no luck involved in life a. Many times, I might just as well decide what to do by flipping a coin. b. In my case, getting what I want has little or nothing to do with luck.
pe3	Life will work out OK/not so sure a. I've usually felt pretty sure my life would work out the way I want it to. b. There have been times when I haven't been very sure that my life would work out the way I want it to.
pe4	Plan ahead/live day-to-day a. I am the kind of person who plans his life ahead all the time. b. I am the kind of person who lives more from day to day.
pe5	Plans work out OK/plans change a. When I make plans ahead, I usually get to carry things out the way I expected. b. When I make plans ahead, things usually come up to make me change my plans.
	Anxiety
Panx	Seven item past test anxiety scale
Ianx	Seven item interview anxiety scale

Table A3.2

Projective Response Items Included in the Factor Analyses

Symbol	Description
	From Individual Responses; Standard Achievement Codings of Responses to the Following Cues
P1	Picture of two men in machine shop, or two women in lab
P2	Picture of man in office with picture, or woman upholstering chair
P3	"Ted/Joan never hesitates to give his/her opinion."
P4	"After first term final exams, Phil/Jill finds himself/herself at the top of his/her class at medical school."
SP1	"In the next ten years, I'm going to ________________________."
SP2	"Compared to other men/women my age, I ____________________."
	From Responses to P1, P2, P4 (the Longer Stories)
Blck	Obstacles in the person or situation to accomplishment of a goal
Mast	Concern with doing well, better, or best at a task
SComp	Task-related comparisons with others
SApp	Task-related evaluations of one person by another
FOr	Concern with long-term goals
	From Responses to P1, P2, P3, P4
PEff	Confidence, positive evaluation of one's own ability
+Out	Any positive outcomes to a story
+Act	Instrumental acts with positive consequences
Pow	Concern with control of the means of influencing others

Finally, several behavioral assessments of achievement orientation were included. Five moderate-risk preference measures following the Digit Span, Sentence Completion, Raven, Ammons, and Information intelligence tests were included; these are fully described in Appendix 2. Each was constructed to tap high resultant achievement motivation. A sixth moderate risk preference measure was devised from the respondents' choice of moderate or easy Digit Symbol Substitution form. Finally, we included a performance measure, differential performance on moderate and very difficult DSST forms. This performance measure was derived from work by Atkinson and Feather (1966).

The six indicators of moderate risk and the performance measure are listed in Table A3.3 with their abbreviations and shortened forms.

Table A3.3

Behavioral Responses Included in the Factor Analyses

Abbreviation	Description
Risk Preference Items	
DigSp	Choice following Digit Span Test; easy and hard/moderate
SCT	Choice following Sentence Completion Test; easy and hard/moderate
Rav	Choice following Raven Matrices; easy and hard/moderate
Amm	Choice following Ammons Test; easy and hard/moderate
Info	Choice following Information Test; easy and hard/moderate
C-M	Choice following first administration of the Digit Symbol Substitution Test; easy/moderate
Differential Performance	
M-L	Rate on moderate DSST form, minus rate on long form

Thus forty-nine indices of achievement orientation were intercorrelated for each of our four groups: white males, black males, white females, and black females. Pearson r's were used in spite of the restricted range of some of the items (two points in many cases). A principal axes factor analysis yielding an arbitrarily determined ten factors was performed on each matrix; the structures were then rotated to orthogonality by the varimax procedure. This solution was chosen over an oblique solution for simplicity of conceptualization and comparability across structures.

Factor Analysis of Achievement Orientation in White Males

Rather than attempting to analyze the factor structures using all the variables, we defined each factor in terms of the variables with loadings over 40. These variables are listed in the factor tables. The factors are listed in an arbitrary order. See Table A3.4 for the white male structure.

The structure for white males seems to include only two "methods" factors, the first two listed.

Factor two, optimism, seems to be determined mostly by slightly different ways of coding the projective measures for positive orientations. This factor seems to be truly a "methods" factor -- a function of the methods of coding rather than of any psychological phenomenon. The first factor, moderate risk preference, is similar in being mostly determined by similar behaviors, the risk choices following some of the intelligence measures. While it is reassuring to think that the moderate risk preference was reliably and uniformly measured in different intelligence test settings, we were somewhat disappointed that other variables did not have high loadings on this factor. However, we can note with some comfort that some of the moderate risk measures do load on other factors in the analyses. Note that Digit Span Risk Preference, a measure slightly different from the others, does not load on this factor.

Factors three through ten are composed of items from various methods, and so present some interesting psychological patterns. Three factors,

Table A3.4

Factors of Achievement Orientation for White Males; Measures with Loadings over .40 Listed

Factor	Measure Abbreviation*	Loading	Measure Description**
I. Moderate Risk Preference	Ammons	.86	Moderate/easy-hard
	Info	.84	Moderate/easy-hard
	Raven	.63	Moderate/easy-hard
	iel	.60	Compare self to others in nation/of own background
	SCT	.45	Moderate/easy-hard
II. Optimism	PEff	.73	High personal efficacy/low
	+Out	.68	Many positive outcomes/few
	+Act	.52	Many positive activities/few
	Pow.	.50	High power/low
	t6b	.42	No bosses, show real skills/lots of friends
III. Competitiveness	m-1	.70	Better on long DSS form/better on moderate
	SCom	.64	High social comparison/low
	P2	.52	Man in office picture, high achievement/low
	tlc	.50	Stand up for own rights, be kind/want to do his best
IV. Competence	pel	.63	What happens is my own doing/not enough control over life
	pc7	.59	Can do whatever he wants/other people like him
	pc9	.53	Ready to meet challenges/good friend
	p4	.49	Medical school story, high achievement/low
V. Achievement Motive	pl	.64	Men in factory picture, high achievement/low
	digspan	.63	Moderate/easy-hard
	FOr.	.61	High future orientation/low
	p4	.44	Medical school story, high achievement/low
VI. Power	Blcks	.62	Many blocks/few
	t2a	.53	Make friends easily/do as well as others, defend self
	pc8	.49	Can get others to act/hard work gets ahead
	pc5	.44	You thought you did a good job/boss did

Table A3.4 -- Continued

Factor	Measure Abbrevi- ations*	Loading	Measure Descriptions**
VII. Independence	t5b	.67	Do better at what I try/more friends, get attention
	Ianx	.51	Low interview anxiety/high
	Panx	.48	Low past test anxiety/high
	t3c	.48	Plan ahead, not be weak/do what teachers expect
	SCT	.41	Easy-hard/moderate
VIII. Task Orientation	pc2	.65	Better worker so quit job/too much competition
	t7b	.60	Think for self, lots of say on job/nice group of workers
	pc3	.58	Job no challenge/job too difficult so quit
	sp2	.48	High compared to others achievement/low
	Panx	.42	Low past test anxiety/high
IX. Future Orientation	pe4	.73	Plan ahead/live day-to-day
	pc4	.50	Plan for future/start fresh every day
	pc10	.43	Gives important advice/party fun
	SApp	.42	High social approval/low
X. Status Orientation	ie3	.62	Feel good/think of tests to come
	pc6	.60	Weighty opinion/good neighbor
	t4b	.42	Be a leader/do what teacher expects, be popular

*Measures with loadings of .40 and more.

**First listed alternative indicated direction of measure contributing to positive loading.

numbered III, IV, and V, contain some of the projective items that have been commonly used in the proejctive assessment of achievement motivation. It is interesting that these items separate into clearly different factors for the while males: competitiveness (III), competence (IV), and achievement motive (V). The last two factors show that the projective measures tapped both a generalized expectancy (IV), and a generalized motive (V), not necessarily highly correlated with one another. As a reflection of expectancy, the projective assessment picks up the person's sense of competence, his sense of being able to master his environment. As a reflection of motive, the projective assessment picks up the white male's moderate risk preference and his response to success. This reaction to success comes from item P4, in which the respondent completed a story about Bill, who was at the top of his medical school class.*

Furthermore, the third factor, competitiveness, also contains one of the projective items. It seems that the projective assessment taps not only an element of personal competitiveness with a standard of excellence, but also competition with other people. The loading of .70 on M-L performance on the DSST on factor III suggests that a competitive orientation in projective fantasy in fact predicts negatively to the kinds of things researchers in achievement motivation would like to predict -- moderate risk-taking and striving to do one's best.

In addition to these three central factors of achievement orientation, several other factors included a variety of questionnnaire techniques: power (VI), independence (VII), task orientation (VIII), future orientation (IX), and status orientation (X). All these are sensible dimensions of achievement orientation, having been considered by various researchers at different points of theory construction or empirical work. Many of the factors have a connotation of power, which many social scientists view as highly related to achievement orientation (Veroff and Veroff, 1971).

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*In the other groups, this response seemed to be more of a reflection of a lack of fear of success than of an actual positive achievement motive.

For some groups, power may even be the predominant achievement orientation to measure. DeCharms (1968) thinking and current research would testify to that position.

It could very well be that all of these factors might be useful in understanding achievement behavior. If the researcher analyzes the particular achievement situation that he wants to comprehend, and discovers that the route to achievement in that setting is via an orientation of mastery or of autonomy, or via an orientation of status, then the particular factors that have emerged in this factor analysis reflecting these dimensions might be the most useful ones to use in predicting that behavior in the future.

We would thus suggest that the three factors based on the usual projective assessments of achievement (competitiveness, competence, and achievement motivation) are perhaps the most generally useful in predicting to all achievement settings for white males, while the more specific factors (power, independence, task, future, and status orientations) might be useful in making more refined predictions to achievement settings in which any one of them is the primary psychological component of achievement.

This kind of factor structure suggests that in their responses to forced choice and projective items, white men do make some refined distinctions in the nature of achievement being discussed.

However, we recognized that the well-defined factors we labeled as psychologically meaningful and the 49-variable factors rotated to orthogonality were not identical, and we wanted to substantiate further the independence of our dimensions. To do so, we devised "factor scores", or scales, based not on the total factor structure, but only on those items with loadings of .40 or over, the items we had used to define the factors. We then intercorrelated the scales as reported in Table A3.5, as an indirect way to see if there is any deviation from orthogonality in dimensions thus devised. Note that some scale pairs have common items, which make some of the inter-scale correlations spuriously high; these instances are marked in Table A3.5.

Table A3.3

Intercorrelations of Factor Scores based on Items with Over .40 Loadings (White Males)

Factor Scores		Risk Preference 1	Optimism 2	Competitiveness 3	Competence 4	Achievement Motive 5	Power 6	Independence 7	Task Orientation 8	Future Orientation 9
Optimism	2	.31**								
Competitiveness	3	.10	-.03							
Competence	4	.26*	.06	.09						
Achievement Motive	5	.15	.00	.04	+ .35**					
Power	6	-.11	-.13	-.09	.12	.00				
Independence	7	+ -.30**	-.03	-.10	.05	.09	.09			
Task Orientation	8	-.17	.00	.11	.09	.00	.04	+ .32**		
Future Orientation	9	.07	.05	-.12	.13	.08	-.03	.00	-.12	
Status Orientation	10	.11	-.02	-.06	.04	.09	.13	.18	-.11	-.04

N = 83.
*p ≤ .05.
**p ≤ .01.
+ pairs with items in common

A triangle is drawn around the cluster of intercorrelations of achievement dimensions measured by projective methods. The competitiveness factor does not correlate with the other two projective assessment factors, while the competence factor correlates positively with the achievement motive factor. This might suggest that, for white males, what has been called "achievement motive" from projective fantasy, may in fact contain much more competence orientation than competitiveness orientation, contrary to what Smith (1968) has recently suggested.

The rest of the matrix suggests that the dimensions of achievement motivation are indeed relatively independent of one another. However, there are some significant correlations (note that many are generated by scales with common items): task orientation correlates with independence, and risk preference correlates with optimism, competence, and (negatively) with independence. These results suggest that a socially oriented achievement motivation is involved in moderate risk preference, while an autonomously oriented motivation is involved in taking extreme risks and being task oriented.

A second way to test the independent effectiveness of the several dimensions is to see whether they seem to have different predictive power for some external criteria. In Table A3.6 are the correlations of the ten factor scales with three variables we assume have some achievement motivation underpinnings: education, occupational mobility, and a performance measure controlled for ability.

These variables, which will be used in the analyses for each group, were included for their disparate relationships to achievement motivation. Education (years attained by the respondent) can be thought of as both a result of and a conditioner of motivation. Occupational mobility (Duncan's prestige coding of the respondent's occupation, minus that of his father) could reflect both traditional motivation and more practically and socially-oriented abilities to achieve. Digit Symbol Substitution Residual (performance on the first 60-second coding form, with intellectual potential (Sentence Completion Test score) and age controlled is certainly a result of more momentary, short-term motivations.

Table A3.6
Correlations of Factor Scores with Achievement Variables, White Males

Factor Scale	Achievement Variable DSS Residual	Education	Occupational Mobility
Moderate Risk	-.05	.01	.25*
Optimism	.09	.03	.20
Competitiveness	.06	-.20	-.11
Competence	.10	.05	-.09
Achievement Motive	.11	.11	.10
Power	.26*	.32**	-.08
Independence	-.05	.14	-.05
Task Orientation	.23*	.11	.08
Future Orientation	-.04	-.01	.05
Status Orientation	.16	.22	-.01

N = 66.

*$p \leq .05$.

**$p \leq .01$.

As Table A3.6 shows, different predictors are effective for different dependent variables. The power scale is particularly effective in predicting education, while both the power and task orientation scales predict Digit Symbol Substitution performance. Only moderate risk-taking predicts occupational mobility. The more general scales, our "projective" dimensions -- competitiveness, competence, and achievement motivation -- are not too effective for white males, although there are some indications that the achievement motive factor is related positively to all three variables, while the competitiveness factor tends to be negatively related, especially to education.

Some of these individual results, such as the power scale's importance in predicting education and the trend for there to be a negative relation of competitive orientation to education, have special psychological interest. However, the most important result is that a multi-faceted consideration of achievement orientation proved very useful in predicting various external variables.

In discussing our parallel analyses in the three other groups, we will try to note any dimensions that seem effective across-group predictors. It will soon become apparent, however, that each group seems to have its own individual phenomenology of achievement motivation.

Factor Analysis of Achievement Orientations in Black Males

The factor structure for black males is listed in Table A3.7. Only one of the ten factors appears to be a methods factor (X), for moderate risk-taking items.

Three dimensions including projective assessments of achievement orientation parallel those for the white males; with some different items: competence (I), competitiveness (II), and achievement motivation (V). In addition to these, however, we seem to have for black males two other dimensions of projective assessment: fear of failure (III) and fear of success (IV).

Factor III has high loadings for power and blocks, which sound very much like the kind of images coded in Birney, Burdick and Teevan's system for fear of failure (1969). Factor IV can be called fear of success because it contains not only the absence of imagery to a success-oriented cue (P4), often coded for fear of success using Horner's system, but also a choice of difficulty on the Raven Test and refusal to endorse an item alternative accepting a feeling of having done well (ie2). Such a syndrome did not appear in factor structure of the white males. For them, lack of imagery on the success-oriented cue was correlated with lack of imagery

Table A3.7

Factors of Achievement Orientation for Black Males; Measures with Loadings over .40 Listed

Factor	Measure Abbreviations*	Loading	Measure Descriptions**
I. Competence	PEf	.67	High personal efficacy/low
	+Out	.63	Many positive outcomes/few
	+Act	.62	Many positive activities/few
	sp1	.54	High next ten years achievement/low
	Mast	.52	High mastery/low
	FOr	.47	High future orientation/low
	Ammons	.43	Moderate/easy-hard
	p2	.41	Man in office picture, high achievement/low
II. Competitiveness	ie1	.61	Compare self to those of own background/others in nation
	t3c	.56	Do what teachers expect/plan ahead, not be weak
	sp2	.43	High compared to others achievement/low
	p3	.40	High never hesitates to give his opinion achievement/low
	pc10	.40	Party fun/gives important advice
III. Fear of Failure	Pow	.78	High power/low
	Blcks	.67	Many blocks/few
	SApp	.56	High social approval/low
	pc4	.48	Start fresh each day/plan for future
IV. Fear of Success	ie2	.66	Want to know more about the tests/feel good
	t2a	.56	Do as well as others, defend self/makes friends easily
	p4	.48	Low medical school achievement/high
	ie[illegible]	.46	Think of tests to come/feel good
	t6b	.43	No bosses, show real skills/lots of friends
	Raven	.41	Easy-hard/moderate
V. Achievement Motive	pe3	.68	Life will work out OK/not so sure
	SCom	.57	High social comparison/low
	pc2	.48	Better worker so quit job/too much competition
	sp2	.45	Low compared to others achievement/high
	pc8	.43	Hard work gets ahead/can get others to act

Table A3.7 -- Continued

Factor	Measure Abbreviations*	Loading	Measure Description**
VI. Task Orientation	pc5	.66	You thought you did a good job/boss did
	t4b	.61	Be a leader/do what teacher expects, be popular
	pc7	.58	Can do whatever he wants/others like him
	pc3	.53	Job no challenge/job too difficult so quit
	m-1	.50	Better on moderate DSS form/better on long
	t7b	.45	Think for self, lots of say/nice group of workers
VII. Affiliative Orientation	SCT	.68	Moderate/easy-hard
	t5b	.47	More friends, get attention/do better at what I try
	t6b	.44	Lots of friends/no bosses, show real skils
	digspan	.42	Easy-hard/moderate
	Ammons	.41	Moderate/easy-hard
	tlc	.41	Stand up for own rights, be kind/wants to do his best
VIII. Independence	Ianx	.78	Low interview anxiety/high
	Panx	.73	Low past test anxiety/high
	pel	.48	What happens is my own doing/not enough control over life
	pcl	.44	Too little to say on job so quit/too much to decide on
	pe3	.44	Sure life will work out OK/not so sure
IX. Power	pc9	.53	Ready to meet challenges/good friend
	pc10	.44	Gives important advice/party fun
	pel	.41	Not enough control over life/what happens is my own doing
	pe5	.61	Plans work out OK/plans change
X.	No loadings over .40.		

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*Measures with loadings of .40 and more.

**First listed alternative indicated direction of measure contributing to positive loading.

on item P2, a picture of men working in a machine shop, implying a more generalized achievement motive structure rather than a special fear of success component.

These results would argue that the projective fantasy in black males is more complicated and multi-faceted than it is in white males. In addition to competitiveness, competence, and the achievement motive, we have clear indications that there are two separable dimensions for fear of failure and fear of success.

Some of the more specific achievement oriented dimensions are also similar to those of the white males: task orientation (VI), independence (VIII), and power (IX). There are, however, no clear future orientation or status orientation factors. Interestingly, an affiliative orientation factor seems to replace the white males' status factor. It is as if affiliative concerns are the salient and dominant social concerns in achievement for black males, while status oriented concerns are the more socially oriented concerns for white males.

Table A3.8 reports the intercorrelations of the factor scales; the triangle is drawn around the intercorrelations for the five projective measures dimensions. There is some tendency for the competence orientation to relate to both competitiveness and fear of success while, remarkably, these two do not relate to each other. This would suggest that the components of competence orientation in black males may be highly conflicting, partaking both of competitiveness and a concern about doing too well. This is further corroborated by the negative correlation of competitiveness with achievement motivation.

The other significant correlations in the matrix present some interesting results about the achievement orientations of black males. In particular, the power orientation dimension is correlated with a dependency and a lack of competitiveness. This suggests that power orientation plays for black males a compensatory role.

Besides the intuitively reasonable positive correlation between independence and the achievement motive, the other interesting correlation in Table A3.8 is the significant negative relation between the affiliative

Table A3.8

Intercorrelations of Factor Scores Based on Items with Over .40 Loadings (Black Males)

Factor Scores		Competence 1	Competitiveness 2	Fear of Failure 3	Fear of Success 4	Achievement Motive 5	Task Orientation 6	Affiliative Orientation 7	Independence 8
Competitiveness	2	.23*							
Fear of Failure	3	-.02	.16						
Fear of Success	4	.21*	.04	.05					
Achievement Motive	5	.09	+ -.21*	-.15	.06				
Task Orientation	6	.06	.03	.03	.12	.12			
Affiliative Orientation	7	+ .09	-.10	-.07	+ -.41**	.17	-.15		
Independence	8	.17	.00	.05	-.05	+ .43**	.12	.17	
Power	9	-.08	-.35**	-.04	.11	.03	.02	-.04	+ -.21*

*p ≤ .05.

**p ≤ .01.

N = 90.

+ pairs with items in common.

dimension and fear of success. This is the opposite to what has been hypothesized for women by Horner; her assumption is that the more affiliative oriented women would be those most fearful of success. Perhaps one could argue that men either are oriented to achievement for getting the approval of friends, or they think in somewhat competitive terms, which in turn induces a fear of success. It is as if the black males who are fearful of success are those who have neither capitulated to the success orientation of the dominant culture nor adopted the affiliative mode of achieving success, but perhaps are caught somewhere in between.

Table A3.9 reports the results of the second method of investigating the achievement dimension scales, correlating them with other variables reflecting achievement motivation. The most striking result is that many more scales correlate highly with education than was true for white males. Perhaps one could say that for white males, education is taken for granted as a vehicle of success so that there are less motivational factors involved in determining who is and who is not educated. For black males, with the opportunities and social pressure for education more limited, anyone who does obtain more education perhaps does so out of a highly personalistic orientation, one that would be reflected in measures of motivation.

In a multiple regression on education, the only significant predictor from the dimensions was the competence factor (beta = .36), the most generalized of the black males' factors. However, the fact that a number of other factors contribute to increase the multiple R to .47 even though not significant in themselves, is potentially very interesting with respect to significance of educational attainment among black males.

Digit Symbol Substitution Residual seems to be predicted by several factors, while occupational mobility related to a most interesting combination of factors: task orientation and power. This pair of predictors does seem to make good sense, implying that a combination of power-seeking and job-centered orientation are necessary for a black male to get ahead.

Table A3.9

Correlations of Factor Scores with Achievement Variables, Black Males

Factor Scale	DSS Residual	Education	Occupational Mobility
Competence	.11	.30**	.10
Competitiveness	.09	-.03	.07
Fear of Failure	.10	.18	.07
Fear of Success	.03	.03	-.04
Achievement Motive	.26*	.28*	.04
Task Orientation	.24*	.32**	.26*
Affiliative Motive	-.07	-.19	.03
Independence	.22*	.45**	.11
Power	-.05	-.07	.23*

N = 75.

*p ≤ .05.

**p ≤ .01.

Factor Analysis of Achievement Orientation in White Females

The factor structure for white females, reported in Table A3.10, is similar to that of the black males in having a large number of projective fantasy dimensions. Six different factors describe the projective fantasy of achievement orientation in white females. They are:

Factor I	Competence orientation, similar to factors in the male groups;
Factor II	Career achievement motive, so labeled because of the high loading of P1, the picture of two women working in laboratory, which is commonly interpreted as a career cue for women;
Factor III	Fear of failure, similar to the black male factor, with a high loading for power imagery;
Factor IV	Homemaking achievement motive, highlighted by a high loading of the fantasy responses to a picture of a woman upholstering a chair;
Factor V	Competitiveness, similar to factors found in the male groups;
Factor VI	Fear of success, not unlike that for black males. The loading in P4, the success cue, is somewhat below our criterion.

Only the distinction between career and homemaking achievement motives, critical for describing the phenomenology of achievement in women, distinguishes this structure from that of the black males.

The structure also seems to include three other factors previously found for males: independence (VII), task orientation (VIII), and mastery (IX). What is absent is a socially-oriented factor, an affiliative or status dimension. Furthermore, there is no specific future orientation factor, suggesting that for a woman future achievements are not specifically tied to her own accomplishments. The necessity for vicarious achievement in a homemaker's role may dilute the whole orientation to the future as a concern about personal achievement.

Table A3.10

Factors of Achievement Orientation for White Females; Measures with Loadings over .40 Listed

Factor	Measure Abbreviations*	Loading	Measure Description**
I. Competence	t4b	.62	Be a leader/do what teacher expects, be popular
	pc8	.54	Can get others to act/hard work gets ahead
	Raven	.53	Moderate/easy-hard
	pc5	.50	You thought you did a good job/boss did
	pc7	.47	Can do anything he wants/other people like him
	t7b	.43	Think for self on job, lots of say/nice group of workers
	+Act	.43	Many positive activities/few
II. Career Achievement Motive	Info	.62	Easy-hard/moderate
	pl	.61	High lab picture achievement/low
	FOr	.59	High future orientation/low
	pel	.57	Not enough control over life/what happens is my own doing
	t5b	.54	More friends, get attention/do better at what I try
III. Fear of Failure	Ammons	.74	Easy-hard/moderate
	Pow	.61	High power/low
	SCT	.52	Easy-hard/moderate
	pc2	.51	Too much competition so quit job/better worker
IV. Homemaking Achievement Motive	p2	.62	High upholstery picture achievement/low
	Mast	.59	High mastery/low
	pe3	.54	Not so sure life will work out OK/sure of that
V. Competitiveness	spl	.69	High next ten years achievement/low
	SCom	.57	High social comparison/low
	sp2	.47	High compared to others achievement/low
	pe4	.40	Plan ahead/live day-to-day
VI. Fear of Success	c-m	.58	Picked hard DSS form/picked easy
	ie3	.48	Think of tests to come/feel good
	Panx	.47	High past test anxiety/low
	digspan	.46	Easy-hard/moderate
	P4	.24	Low achievement on medical school story/high

Table A3.10 -- Continued

Factor	Measure Abbreviations*	Loading	Measure Description**
VII. Independence	t2a	.58	Make friends easily/do as well as others, defend self
	Ianx	.56	Low interview anxiety/high
	t3c	.54	Plan ahead, not be weak/ do what teachers expect
	Panx	.40	Low past test anxiety/high
VIII. Task Orientation	pc3	.67	Job no challenge/job too difficult so quit
	Raven	.48	Easy-hard/moderate
	pc2	.47	Better worker so quit/too much competition
	pc10	.46	Gives important advice/party fun
IX. Mastery	pc9	.70	Ready to meet challenges/good friend
	iel	.57	Compare self to those of own background/to others in nation
	pe2	.56	No luck involved in life/might as well flip a coin
X.	No loadings over .40.		

*Measures with loadings of .40 and more.

**First listed alternative indicated direction of measure contributing to positive loading.

How do these various dimensions intercorrelate? The results can be seen in Table A3.11, with a triangle drawn around the projective factors.

Table A3.11
Intercorrelations of Factor Scores based on Items with Over .40 Loadings, White Females

Factor Scores		Competence 1	Career Achievement Motive 2	Fear of Failure 3	Homemaking Achievement Motive 4	Competitiveness 5	Fear of Success 6	Independence 7	Task Orientation 8
Career Achievement Motive	2	-.27**							
Fear of Failure	3	-.13	.30**						
Homemaking Achievement Motive	4	.02	.01	-.28**					
Competitiveness	5	.05	.16	.21*	.01				
Fear of Success	6	.04	-.14	.08	-.05	-.01			
Independence	7	.03	-.07	.08	-.01	.05	+ -.29**		
Task Orientation	8	+ -.31**	.03	+ -.02	-.12	.03	-.05	.09	
Mastery	9	-.02	-.11	-.07	.04	-.05	.09	-.07	-.05

N = 88.

*p ≤ .05.

**p ≤ .01.

+ pairs with items in common

The exciting result from this matrix is that career orientation for white women seems to operate in a totally unexpected way: it is negatively correlated with competence and positively related to fear of failure. Furthermore, homemaking achievement orientation is negatively correlated to fear of failure. It is as if women concerned with career achievement have a somewhat defensive orientation to traditional achievement (competence, mastery); while courting success, they are afraid of failure. The woman concerned with homemaking achievement is not afraid of failure, but also does not seem to be concerned with other achievement dimensions.

Other significant results are the positive correlation between the fear of success and independence in white women and the negative correlation between competence and task orientation. The former correlation is very much like what we have found with the black males; that is, there seems to be a conflict between a fear of success orientation and a more affiliative or social orientation, with those more fearful of success being unable to take a social or dependent orientation toward their achieving. Again, this suggests that women who are fearful of success are in fact very ambivalent, being concerned about their own achievement at the same time they are concerned about the way others react to them, and not being able to resolve this conflict one way or another. The second correlation, the negative one between task orientation and competence, seems paradoxical. It may imply that white women with a competence orientation also would have a social orientation, rather than a less "feminine" task orientation.

How do these dimensions of achievement motivation predict education and DSS Residual?* As Table A3.12 shows, none of the achievement dimensions are effective predictors of the performance residual. However, as for the black males, several dimensions correlate significantly with education, with independence the strongest predictor. This may indicate that it is those white females relatively independent of social pressures who attain higher educational levels.

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*Occupational mobility was not analyzed for women because comparison with the father seemed inappropriate, and because many women did not have classifiable occupations.

Table A3.12
Correlations of Factor Scores with Achievement Variables
(White Females)

	Achievement Variables	
Factor Scale	DSS Residual	Education
Competence	.07	.22*
Career Achievement Motive	.15	.04
Fear of Failure	-.05	.22*
Home Achievement Motivation	-.02	-.12
Competitiveness	.10	.13
Fear of Success	-.04	-.22*
Independence	.10	.32**
Task Orientation	.02	.23*
Mastery	-.16	-.12

$N = 78$.

*$p \leq .05$.

**$p \leq .01$.

Factor Analysis of Achievement Orientation in Black Females

Table A3.13 lists the factor structure for the black female sample. Like that of the white female, it includes several different projective assessment factors: competitiveness (II), fear of failure (III), career orientation (IV), a somewhat different competence factor (V), homemaking achievement (VI), and fear of success (VII). In addition to these projective factors are dimensions of future orientation (VIII) task orientation (IX), power (X), and a moderate risk preference methods factor (I).

Table A3.13

Factors of Achievement Orientation for Black Females; Measures with Loadings over .40 Listed

Factor	Measure Abbreviations*	Loading	Measure Description**
I.	Info	.81	Moderate/easy-hard
Moderate Risk	Ammons	.78	Moderate/easy-hard
Preference	t4b	.62	Be a leader/do what teacher expects, be popular
II. Competitiveness	iel	.63	Compare self to mation/to others of own background
	t6b	.53	No bosses, show real skills/lots of friends
	Scom	.52	High social comparison/low
	spl	.48	Low next ten years achievement/high
III.	Blcks	.59	Many blocks/few
Fear of	SCT	.54	Moderate/easy-hard
Failure	Panx	.54	High past test anxiety/low
	ie2	.48	Want to know more about the tests/feel good
IV.	FOr	.75	High future orientation/low
Career	Pow	.64	High power/low
Achievement	PEff	.61	High personal efficacy/low
Motive	pl	.54	High lab picture achievement/low
V.	SApp	.67	High social approval/low
Competence	pe2	.52	No luck involved in life/might as well flip a coin
	pc4	.51	Plan for future/start fresh each day
	pc2	.41	Quit job because a better worker/too much competition
VI. Homemaking	t3c	.70	Plan ahead, not be weak/do what teachers expect
Achievement	p2	.52	High upholstery picture achievement/low
Motive	+Out	.46	Few positive outcomes/many
	ie3	.41	Think about tests to come/feel good
	tAct	.40	Few positive activities/many

Table A3.13 -- Continued

Factor	Measure Abbreviations*	Loading	Measure Description**
VII. Fear of Success	p4	.63	Low medical school story achievement/high
	pc5	.55	Boss thought you did a good job/you did
	c-m	.55	Picked easy DSS form/picked hard
	t7b	.48	Think for self, lots of say/nice group of workers
VIII. Future Orientation	ie3	.61	Think of tests to come/feel good
	pe4	.59	Plans work out OK/plans change
	pe5	.59	Plan ahead/live day-to-day
	pcl	.48	Too much to decide on so quit/too little say on job
	pel	.48	What happens is my own doing/not enough control over life
IX. Task Orientation	pc8	.66	Hard work gets ahead/can get others to act
	t5b	.62	Do better at what I try/more friends, get attention
	pc7	.51	Can do anything he wants/others like him
X. Power	pc6	.74	Weighty opinion/good neighbor
	pcl	.61	Too little say on job/too much to decide on
	pc3	.60	Job no challenge/job too difficult

*Measures with loadings of .40 or more.

**First listed alternatives indicated direction of measure contributing to positive loading.

The black females, then, are like the white females in having separate career and homemaking achievement orientation dimensions, with some emphasis on fear of success and fear of failure. Like the white males, they have a specific power and future orientation factors.

Table A3.14 shows the intercorrelations of the achievement dimensions for black females. The factors in the projective assessment triangle seem to be relatively independent, except for one instance: a high negative correlation between career orientation and fear of success. That career oriented black women do not fear success might be a reflection of their frequent position as sole support of a family, and indicate that success for women is a positively valued factor in the sub-culture.

Other correlations in Table A3.14 deserve attention. Future orientation seems rather peculiarly related to other factors for black females: negatively to power, and positively to homemaking orientation. We would suggest that for black females future orientation may imply a wishfulness that the future will be better, rather than a goal-oriented perspective as for the white males. Indeed, putting things into the future may be a way to avoid facing one's present powerlessness.

There are three other significant correlations with power, which suggests that power orientation is a significant dimension to consider for understanding the structure of achievement orientation for black females.

The results of correlating the dimensions with other variables, reported in Table A3.15, support this hypothesis: power orientation is correlated significantly with both dependent variables. In addition, the task orientation factor also predicts attained education. These results may reflect the educational success of women willing to extend themselves beyond the usual female role. This is additionally supported by the strong negative relation of fear of success and homemaking achievement orientation to actual performance in the interview.

Table A3.14

Intercorrelations of Factor Scores based on Items with Over .40 Loadings, Black Females

Factor Scores		Moderate Risk Preference 1	Competitiveness 2	Fear of Failure 3	Career Achievement Motive 4	Competence 5	Homemaking Achievement Motive 6	Fear of Success 7	Future Orientation 8	Task Orientation 9
Competitiveness	2	.04								
Fear of Failure	3	-.09	.06							
Career Achievement Motive	4	.01	-.04	-.03						
Competence	5	-.25*	.07	-.17	-.11					
Homemaking Achievement Motive	6	.06	-.09	.06	-.02	-.16				
Fear of Success	7	-.07	-.10	-.04	-.30**	.07	-.15			
Future Orientation	8	-.14	.00	-.02	-.03	+ .14	.32**	-.02		
Task Orientation	9	.00	.03	-.10	-.01	-.04	.04	-.05	-.10	
Power	10	.23*	-.09	.01	.10	-.07	.00	-.25*	+ -.36**	.27**

N = 92.
*p .05.
**p .01.
+ pairs with items in common

Table A3.15

Correlations of Factor Scores with Achievement Variables (Black Females)

Factor Score	Achievement Variable	
	DSS Residual	Education
Moderate Risk	.04	.10
Competitiveness	.07	.10
Fear of Failure	.13	-.03
Career Achievement Motive	.18	.13
Competence	.16	.00
Homemaking Achievement Motive	-.22*	-.10
Fear of Success	-.24*	-.26
Future Orientation	-.06	.00
Task Orientation	.13	.23*
Power	.24*	.34**

N = 83.

*p = .05.

**p = .01.

Relating the Factor Structures to One Another

Now that we have examined the particular phenomenology of achievement motivation for each of our separate groups, we must ask if there is a universal set of achievement dimensions common to all groups. Already we have seen some parallels. The structure for each group consists of two types of factors, generalized ones based on projective assessment, and others of more specific contents. Even within the projective dimensions, however, there is some separation into different achievement domains -- except in the white male structure, which yielded only the three generalized factors of competence, competitiveness, and achievement motivation. These three factors are also present in the other three groups, although the achievement motive dimension is fragmented into career and homemaking orientations for both female groups. (See Table A3.16 for a graphic representation of these comparisons.) All groups other than the white males also have fear of success and fear of failure factors. The fear of success dimension appears especially important for females, negatively predicting an achievement variable for both race groups.

Of the non-projective dimensions, two in particular are of interest: power and task orientation. There is a power dimension in all structures but that of the white females, and it significantly predicts at least one dependent variable (DSS Residual, education, or occupational mobility) in each case. For the white females, an independence dimension seems to take its place. Task orientation emerges as a dimension in all four groups and again significantly predicts at least one external variable in each case.

Thus, the basic common achievement structure for the four race-sex groups is composed of five factors based on projective assessment -- competence, competitiveness, achievement motive (split into two parts for females), fear of success, and fear of failure -- and two more specific factors, power and task orientation. Some are more important in one group than in others. Furthermore, the specific ones emerge in certain groups. These results have led us to reconsider the whole definition of the

Table A3.16

Occurrence of Factor Scale, Significantly Predicting Achievement Variables, for Four Race-Sex Groups

	White Males	Black Males	White Females	Black Females
Projective Factors				
Competence	NS	Ed	Ed	NS
Competitiveness	NS	NS	NS	NS
Achievement Motivation	NS	DSS, Ed	X	X
Career	X	X	NS	NS
Homemaking	X	X	NS	DSS
Fear of Success	X	NS	Ed	DSS
Fear of Failure	X	NS	Ed	NS
Specialized Factors				
Power	DSS, Ed	Occ	X	DSS, Ed
Independence	NS	DSS, Ed	Ed	X
Task Orientation	DSS	Ed, DSS Occ	Ed	Ed
Future Orientation	NS	X	X	NS
Social Orientation (Addiliation or Status)	NS	NS	X	X
Mastery	X	X	NS	X
Methods Factors				
Risk-taking Preference	Occ	X	X	NS
Optimism	NS	X	X	X

Legend:
Ed = Education Attained.
DSS = Digit Sumbol Substitution Residual
Occ = Occupational Mobility (males only)
NS = Not a significant predictor.
X = Not a factor for the group.

achievement motive, in particular how general it is, and how it may be broken into various significant components, perhaps differently for different groups. In the next section we present a theoretical discussion about this very general conclusion.

Different Types of Personal Achievement Orientations: A Tentative Model

Let us state what seems to have been the generic definition of the goal state for the achievement motive that researchers have been using: competing successfully with standards of excellence through one's own effort. Different types of achievement orientations emerge when we begin to consider that different people in the same situation emphasize different aspects of this goal state. Furthermore, we begin to find different types of achievement orientations emerging when the same person emphasizes different aspects of this goal state in different situations. Rather than merely listing each of different orientations that can emerge, one after another, we would like to suggest a three-dimensional analysis that integrates some of these orientations, that have been in evidence in research on achievement motive over the past three decades, but most critically in the current study. Each of these dimensions perhaps requires a different type of assessment.

The first dimension of achievement orientations to consider, asks the question..What is the person's affective orientation to successful striving? The second dimension asks the question...How much of the future does the person consider in his achievement orientation? The third dimension asks the question...How does the person structure his definition of success?

Affective Orientation to Success

The first dimension -- the affective orientation to success -- has been highlighted in research in the past by those researchers who have emphasized the fear of failure component of achievement motivation. These people have drawn a distinction between a positive attraction to success, or hope of success versus a repulsion to failure, or fear of failure. One might say that the hope of success implies that the person feels gratified when he succeeds _ipso facto_ without concerning himself about the possibility of failure.

The person who is motivated by fear of failure, however, views success as a relief from the tension of anticipation of failure. Although in some instances the positive orientation (hope of success) may have the same consequences as fear of failure, Atkinson and others have shown that fear of failure may in some instances have an inhibitory effect. People high in fear of failure may withdraw from situations that demand a test of their ability. The tension from fear of failure might also affect the type of performance the person is able to come through with in an achievement setting. It has been generally agreed that the achievement motive as measured through projective fantasy largely reflects the positive hope of success orientation, while other types of assessments have been required to measure the fear of failure.

A number of researchers have tried to code the fantasy protocols themselves for the fear of failure orientation with considerable success, and still other researchers have used different measures, such as Mandler and Sarason's measure of test anxiety (Mandler and Sarason, 1952).

The new affective orientation to success that has to be considered is one mentioned earlier -- the fear of success. This type of affective orientation is one of ambivalence. One assumes that a person who is fearful of success also would like it. Thus, the ambivalent orientation suggests that the person is both hopeful of success and is repulsed by the consequences of success. Most likely the particular consequences feared is social rejection of one form or another.

In the present study, we have found each of these orientations -- hope of success, fear of failure and fear of success much in evidence in the way our heterogeneous population responded to different types of questions and behavioral settings that were asked of them.

In all four groups examined in our survey we find a dimension that could be labelled a positive affective orientation to success and in all but one of these, white males, we located these two other dimensions, a fear of failure and a fear of success orientation.

Although we found these similar affective clusters in these groups, we found that the components were particularly related to other facts about the people in different ways in different groups. Thus, we find that it is not the hope of success dimension that seems to be critically determining women's educational level (how far they go in school), but the two other affective orientations, fear of failure and fear of success.

We find that women who are high in fear of failure are those most likely to go on in school, and the women high in fear of success are those least likely to go on in school. Such was not the case for white men, for whom the hope of success component was a strong predictor of going on in school.

The fact that we found a fear of success dimension underlying the responses of the black males in our Detroit survey we find very provocative for understanding the phenomenology of achievement motivation in this disadvantaged group in our American society. We find it an extreme irony that this disadvantaged group in our society, black males, are not only blocked in their success by the discriminatory practices of the entire society, but are potentially blocked by their own internal fear of success. It is as if the entire social structure is based on the presence of a specific disadvantaged group, like the blacks in our society, and in its arrangement creates the motivations for the black group's failure to achieve success.

Orientation to the Future

The second dimension which should be considered in thinking about different types of components of the achievement syndrome is the one that Raynor had suggested in his research.

That is the future orientation of a person. Raynor has indicated that if you take account of what a person's behaviors mean for his future accomplishments, then you end up with different predictions about the relationship of motivation to present performance. Raynor shows how men with high measured achievement motivation will select tasks and perform at tasks not in relationship to what that tasks mean _ipso facto_, but what implications achievement at that task might have for _future_ achievement goals.

If that is the case, and Raynor's results are impressive enough in that regard, then the behavior of men and women may differ considerably in whether or not they do or do not take on future perspective in considering their own achievements.

There should be some people who are high in this future perspective and some people who are low. When we looked at the results of the Detroit survey, we did find that there were two groups in our study who showed a consistent dimension of future orientation in their achievement responses -- the white males and the black females. Furthermore, we found that this future dimension was predictive of the income level of these respondents. That is, those people who are high in future orientation amongst the white males and black females were also those who had higher levels of income. However, we did not find that this orientation to the future related to many many other types of achievement measures, but Raynor's results are too provocative to dismiss this measure for future research.

We do want to point out that the dimension of a future perspective that we found in the black females seemed to be qualitatively different than the future orientation dimension we find in the white males. In the black females the future perspective seemed to be one which wards off their concerns about failure in the present. For example, those women who value thinking about the future also endorse quitting a job because there was too much to think about in a job.

Thus, we find a defensive unrealistic future perspective in the black females in contrast to the more instrumental realistic future perspective in the white males.

We would suggest that future research should follow up what Lewin suggested long ago that we make distinctions in the level of reality that people use in their future time perspectives. Defensive unrealistic future achievement orientation may be, if anything, negatively related to ongoing achievement behaviors.

Cognitive Orientation to Success

Finally, and perhaps most important, we would like to talk about how differentiations in the cognitive appraisals of what constitutes success in achievement strivings might lead to very different types of achievement goals and thus very different types of achievement orientations.

In trying to clarify what we mean by these types of differentiations, we would like to have you refer to Table A3.17.

Table A3.17
Classification of
Types of Achievement Goals

Striving Behavior Focused On	Cognitive Orientation To Self	Cognitive Orientation To Social World
Type of Personal Agency	Power Autonomy	Interdependence
Source of Standard Setting	Effectance	Task Orientation Competitiveness
Source of Evaluation	Competence	Social Approval Status

In that, we want to indicate that the kinds of achievement goals that reflect different orientations to success can be analyzed by considering two different questions:

The first is, on which aspect of achievement striving does a person focus for defining successful performance? The second is, does he depend mostly on himself or on the social world in defining success?

Let us consider the first question -- on which aspect of achievement striving does a person focus for defining success? Remember that we defined achievement striving as the successful competition with standards of excellence through one's own effort. Different people can focus on different points of achievement striving. Some people can focus on whether or not success has been reached, or on the evaluative part of achievement. Other people can focus on the standard of excellence or the standard setting part of achievement. Still others can focus on whether or not the other person performs with his own behavior, or the personal agency part.

/ By examining these different foci, one can emerge with very different types of achievement goals. These are not mutually exclusive foci, but ones which can be emphasized more or less in different people.

If one accounts for both questions, on which aspect of striving the person focuses, and whether he is more oriented to himself or the social world foci, then a circumscribed set of goals seem to be well defined. Almost all of these types of goals have been explored in previous research but especially in some of the findings we are noticing in the Detroit survey.

Let us go through that Table. First, let's consider goals that come about from focusing on the personal agency aspect of striving. They appear in the first row.

We're suggesting that if a person focuses on whether or not he succeeded by his own efforts, depending whether he has a self or a social orientation to his cognitive structuring, he will emerge with either a power or autonomy achievement orientation, or an interdependence achievement orientation.

Let us explicate each. A power related achievement motive is one in which the person gets gratification from feeling that he had control over his own performance. He originated the activity that led to successful competition.

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In our Detroit survey, we asked questions that are like ones coming out of Rotter's scale of Internal-External Control, which asks in one way or another whether the person feels he can control his own destiny.

And of all measures of achievement orientation, the power orientation was most predictive for the black males in our sample. It was also predictive of achievement behaviors in the other samples as well. If we asked, who in the black male Detroit sample were the ones that were most occupationally mobile, we would answer those who have some sense of their own control of their achievement. We would label that orientation a power orientation.

A second type of self-oriented focus on the nature of personal agency in striving behaviors is an *autonomy orientation*, one in which the person says to himself when he achieves, "Not only did I do it, but I did it by myself!" Gratification came from the fact that he mastered a task by himself.

Such a motivational orientation has been fruitful in understanding achievement behaviors in very young children. Lahtinen (1964) showed that five-year-old boys will persist in doing a very difficult task under neutral conditions, but given any indication that their future is being evaluated or that they will be rejected, they lose their autonomous standard. Thus, even in young children one might say that this type of achievement orientation might even stand in the way of realistic goal setting and of actual accomplishment.

We found in our Detroit survey that some of the people who have a strong independence orientation to their achievements do *not* show realistic goal setting. We asked our respondents whether they wanted to try a difficult task or a moderately difficult task and those that have a strong, autonomy orientation were more likely to select the most difficult task, one in which they were likely to fail. Another type of focus on the agency element in achievement striving comes from a more socially oriented sense of agency, when a person is able to be interdependent with a group or another individual. Bronfenbrenner (1962) highlighted this kind of orientation in talking of the achievement training of Russian children. Black leaders in our country suggest that such an orientation may be the spearhead for achievement in blacks in the United States. We did not assess anything remotely like such a dimension. It would be very critical to examine in future research.

Now, let us turn to the achievement goals that are defined by the second row of Table A3.17 -- those that come out of a focus on where the sources of standard of excellence come from. Within this row, we list two types of achievement orientations: effectance, if the cognitive orientation is to the self, and a task orientation or a competitive one, if the cognitive orientation is to the social world.

The effectance orientation has been expounded by White in his theoretical orientation to goal striving (White, 1959). Although this has been a very profound theoretical message for thinking about motivation, it has in fact produced very little in the way of explicit research.

In essence, the idea of effectance motivation is that the person sets his own intrinsic motivations for mastering situations, seeing the world, acting on the world, and generally transacting with it, not for any social rewards explicitly, but for the transaction for its own sake.

Children and adults will want to perform for the sake of performance, the source of standards coming from a person himself, perhaps based on an intrinsic push from his physiology.

What kind of achievement goals does this kind of orientation lead to? It will produce someone who will want to improve over what he did last time, no matter what the absolute level of his performance was. The risk-taking measures used in the Detroit study potentially get at what we would call effectance type of achievement orientation, but the respondents were not alerted to what type of response would indicate a clear improvement in performance. The risk-taking measure more likely gets at competence orientation to be discussed below.

Although we found little evidence for this kind of dimension emerging in the Detroit survey, we asked very few questions that could get at that more self-oriented standard setting. More should be done to measure this in adults.

However, in the Detroit survey we have evidence for both of the more socially oriented standard setting foci that are indicated in the second row of Table A3.17. In all groups, black males, black females, white males, white females, there seems to emerge a task orientation and a competitive orientation to achievement. Let's take each one separately.

In a task orientation we assume that the source of the standard of excellence which a person uses is a function of what is demanded by the task he is doing.

If the task requires the person to solve a problem and he cannot, he will experience failure, regardless of how hard he tries and how much better he performs in trying to solve the task than anyone else or than he ever did before.

We call this a social orientation in the most severe sense of social -- outside the person. A person has to lose his own sense of personal standards in task orientation -- in a sense submerging himself in the task itself.

In all groups we tested in Detroit there seems to be this kind of orientation. We asked a number of questions about liking jobs that were challenging, and it was this kind of question that emerged on a cluster that we would label as task orientation. No index from fantasy assessment appeared on this cluster. But we found this task achievement orientation in fact very strongly related to other measures of achievement that we had -- particularly education: the more educated people were, the more likely they were to have a task orientation.

This dimension was the most predictive of all achievement oriented variables that we used in predicting the level of education and occupational mobility in the Detroit survey. Perhaps in American society if one wishes to get ahead, one must be able to de-personalize a sense of accomplishment enough to know what is demanded of the task to be done, even independent of personal improvement.

A second type of socially oriented source of standard setting comes in what we would call competitiveness. Here a person asks himself how well did I do compared to other people? Again, all groups in our Detroit survey seemed to indicate such a factor. In previous research (Veroff, 1969) this seems to be a very important factor in the development of achievement orientations in young American children.

Elsewhere Veroff suggested that this kind of competitive orientation emerges during middle childhood and is not present in very early development but may be critical for the development of a mature motive achievement orientation. It seems that all groups in American society have at least some element of this competitive adult orientation in their responses to achievement settings. However it may mean different things for the achievement striving in different groups. We found that competitiveness seemed to stand in the way of educational attainment for white males, while it was positively correlated with educational attainment for white females.

Finally, let us look at the last row in Table A3.17: achievement orientations that emphasize the source of evaluation of success a person is using. If such a focus centers on the self, we suggest that the type of achievement orientation should be called competence, and if it centers on other people, we suggest two types of achievement goals could be differentiated, social approval and status.

The competence goal is one in which a person feels he had done well at an effectance orientation. Effectance activates striving behavior and behavior for improvement. A competence oriented person is concerned about whether he has accomplished what he has set for himself.

One assumes that the competence orientation does not depend upon other people telling the person that he has done a good job. He knows very well inside himself what a good job is.

We found that a great deal of the projective assessment in all groups that we studies in the Detroit survey seemed to reflect this competence orientation.

Some people have been very skeptical whether the projective measure of achievement motivation would reflect competence orientation, but the results from our Detroit survey suggest, in fact, that some of what is measured in the fantasy measure is indeed a competence orientation. It also contributed to our understanding of both occupational mobility in men and education in men and women, although not as much as two achievement orientations previously mentioned, task and power orientation.

The more socially oriented sources of achievement evaluation describe other achievement goals -- social approval and status. In the social approval type of goal, a person depends upon someone else's saying, "You have done a good job," before he feels as if he has succeeded, and in the status orientation, a person feels he has not arrived until he has the earmarks of prestige in that community. The latter seems to have been a prominent dimension for white males in American society, while the social approval type of orientation seems to be most prominent in black males.

It is critical to know that none of the projective measures that we used are related to these kinds of social achievement orientations. The users of achievement motive measures have been often accused of taking socially approved or status motivations and calling it achievement. These results suggest that this is not the case, that the achievement orientation as measured by projective fantasy is basically not social approval or status orientation, but is in fact more related to competence.

Summary

We have listed here many different types of achievement orientation, each reflecting a different focus on what constitutes success in the achievement goal. What we are calling for is perhaps an overdose of differentiation of types of achievement orientation. What we hope, though, that is by suggesting the different qualities of achievement orientation, we might be able to provoke researchers into thinking about the way achievement orientations may be differently structured in different groups. Pragmatically, different types of achievement measures are seen to be the most efficient ones in different groups.

For the white males in our Detroit survey power was the kind of variable that seemed to be the critical focus for determining various achievement behaviors. For black males, it was whether or not they had a task orientation to achievement, along with power variables. For white females, it was the autonomy dimension. And for black females it was again the power domain. Thus, everything points to the need to differentiate assessment procedures in different groups, probably because each social group constructs the meaning of achievement orientation differently. There is enough commonality across groups, however, to suggest that some sample set of organizing ideas about the nature of achievement motivation may well be profitable. We tentatively suggest one in this appendix and hope that it can be a catalyst for future research on the problem.

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APPENDIX 4

RESULTS OF THE INTERVIEWER-RESPONDENT RACE EXPERIMENT

ABSTRACT

In a Detroit survey, black and white female interviewers were randomly assigned to black and white respondents of both sexes. Issues investigated include main effects and the interaction effects of I's and R's race on measures of anxiety, achievement motivation, and intelligence. No interactions were found; rather, a pattern emerged with the black interviewers eliciting more refusals, shorter TAT protocols, more positive and less negative projective achievement motivation imagery, a preference for lower risks, and higher IQ test scores. No interviewer race differences were found on the objective achievement scales, or on anxiety.

The "research interview" has been defined by Cannell and Kahn (1968) as a "two-person conversation, initiated by the interviewer for the specific purpose of obtaining research-relevant information . . ." In recent years the social psychology of such conversations has become an object of research in itself (e.g. Rosenthal and Rosnow, 1969). Knowledge of the ways in which an interviewer may, intentionally or not, influence the replies of his respondents is essential to proper assessment of those replies. The present study was designed to investigate the effect of the race of the interviewer, and its interaction with the race of the respondent, upon various measures of achievement motivation, intelligence, and demography given in a household survey.

PAST WORK

Past work concerning interview-respondent race effects on the measurement of intelligence, anxiety, and motivation has been diverse but sparse.[1] Almost all past studies of the effect of examiner-subject race similarity on achievement motivation have measured only anxiety, or have inferred motivation from task performance. Baratz (1967) found that, for 120 black college undergraduates, Test Anxiety Questionnaire scores were significantly higher for the group tested by a white examiner. Katz (1964) hypothesized that contact by blacks with white stranger in "authority" positions (such as interviewer) is anxiety-producing . His studies, all on black male subjects, found that with children, black testers obtained better performance results (Katz, Henchy, and Allen, 1968), but that a more complex relationship held with college students: white examiners elicited higher scores on a digit symbol substitution task, except when anxiety-producing instructions preceeded the task, (Katz and Greenbaum, 1963; Katz, Roberts, and Robinson, 1965).

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[1] However, many investigations of interviewer race effects on the expression of attitudes (especially racial attitudes) have taken place; see Sattler (1970) for a review. Most of this work has very limited applicability to the problems discussed in this paper.

While many more studies of interviewer race effects on intelligence have been conducted, their results are no more definitive. Few studies have used respondents of both races, or adults, or several interviewers of each race; fewer still all three. As early as 1913, Pressey and Teter questioned the reliability of intelligence data collected from Negro subjects by white examiners. The first actual study of the question was by Canady (1936), who tested and retested 48 black and 25 white children using black and white examiners. A reanalysis of the 1936 data by Sattler (1966) shows that on the original testing, respondents scored significantly higher when tested by an examiner of their own race, while on the retest (up to one year later) the opposite was true. Given that Canady employed 20 white but only one black interviewer, the results remain inconclusive. Allen, Dubanoski, and Stevenson (1966), using a marble-drop task with black and white children, found that, over five minutes, children tested by a same-race examiner performed better relative to their established base rate than did children tested by opposite-race examiners. This result, however, did not hold for the base rate period itself, nor for the absolute performance levels. Kennedy and Vega (1965) tested black children on an oddity discrimination task with positive, neutral, or negative evaluative comments given between the two trials. There were no differences due to interviewer race except in the negative comment condition, in which black examiners elicited higher scores.

In summary, the cited studies suggest that, at least for young black subjects, black interviewers may elicit better performance, especially in anxiety-producing or evaluative situations. The conditions in which this result occurs, and the implications for white subjects, are not as clear. In addition, the results taken as a whole cannot be judged conclusive, for the following reasons:

1) many are poorly designed (for this purpose), with inadequate samples of interviewers and subjects across the races;

2) no non-student adults are represented in the subject samples;

3) the tasks vary between performance and learning types, known to be affected differently by anxiety (Zajonc, 1966);

4) results are often weak, referring to only one of several tests administered.

DESIGN

This study is part of an interview survey conducted in Detroit between January and March 1970. The black and white samples were each designed to be cross-section samples of that race's population between 18 and 49 years old in the city, and yielded 188 and 177 respondents, respectively. Sex of respondent also was balanced in each group. Table 1 includes a more complete breakdown. The interviews were conducted by eight white and six black female interviewers, employed and trained by the Survey Research Center of the University of Michigan. Both interviewer groups averaged about 50 years in age; the white group was better educated, with about half the interviewers holding BA's. Each interviewer contacted both blacks and whites in approximately equal numbers in comparable areas of the city.

Motivation. Three types of assessment of achievement motivation were included. The projective method involves an open-ended verbal response to a visual or varbal cue. The objective method requires the respondent to choose between two or three specific alternatives to a straight-forward question. The behavior method attempts to assess motivation by measurement of what the respondent actually does in an actual achievement situation, rather than by what the respondent says he would do.

A. Projective. Four Thematic Apperception Test pictures (two viewed by each sex) were administered with a standard set of probes adapted from Veroff, Atkinson, Feld, and Gurin (1960). Two more items, of the type developed by French (1958) used verbal rather than visual cues, with the same set of story probes. All four of these items (two TAT per respondent, plus two French) were coded for need Achievement using the McClelland et. al. (1958) scoring manual. In addition, other patterns of responses, theoretically related in various ways to achievement motivation, were coded:

-fear of failure (similar to objective anxiety)

-fear of success (dire consequences following success)

-personal efficacy (high confidence in one's own ability to affect what happens)

-future orientation (emphasis on planning and long-term goals)

-autonomy (self-reliance)

-mastery (concern with learning to cope with problems)

-social approval (goal achievement defined by approval of others)

-social comparison (standards of achievement defined by comparison with others, rather than internally)

-power imagery (concern with control of means of influencing others, as defined in the Veroff (1958) coding manual)

Finally, two incomplete sentence items ("In the next ten years I . . . ," and "compared to others my age I . . . "), derived in form from Rogers and Neill (1966), were also coded for achievement motivation.

B. Objective. Seven items selected from the original Test Anxiety Scale (Mandler and Sarason, 1952) were adapted to form two new scales, the "past test anxiety" and the "interview anxiety." In the former, respondents were instructed to think back to school test-taking; in the latter, to the tests just taken as part of the interview. The two scales use parallel items with three-point check scale responses.

Twenty-two forced-choice items, administered orally, were used to measure achievement motivation and its components, plus power and affiliation motives. Five of these items, derived from Epps (1969), composed the "personal efficacy scale," designed to measure self-esteem and confidence. Seven items required the respondent to rank-order three statements concerning one's child, one's job, or oneself. The motives of power, affiliation, and achievement were represented in each triad. The remaining ten items, all two-alternative choices, were derived in part from past work at the Survey Research Center, in part from the Student Opinion Attitude Questionnaire (Atkinson and Moulton, 1969). All the forced-choice items were grouped into two scales:"personal efficacy" (5 items) and "achievement" (17 items).

C. Behavior. Following each intelligence test, the respondent was told that there was one more item to do, and that he could choose whether he wanted to do one that was "easy," "very hard," or "in between." If he chose "in between," he was given a second choice, between "one like most of the ones you got right," or " a little harder than most of the ones you got right." (After the digit span test, however, only three alternatives were offered, since the items of that test are clearly in order of difficulty.) The alternative chosen by the respondent was then administered to him. This procedure was repeated (after different tests) three times for the whole sample, five times for the half-sample receiving Form A (described later). The measure was derived from the Atkinson (Atkinson and Feather, 1958) theory that those with strong achievement motivation prefer to operate under moderate risk (50-50 chance), rather than with a very high or low probability of success. Thus a choice of the moderate item, or one "a little harder than most of the ones you got right," is assumed to be indicative of high achievement motivation.

Intelligence. All respondents received the first four of the seven intelligence tests described below. The Information and Ammons tests were administered only to a random half of the sample, the Picture Order to the other half.

1. Digit Span (WAIS, 1956). The respondent repeats a string of digits backwards, continuing until a length is reached at which two consecutive failures occur.

2. Sentence Completion (Lorge-Thorndike, 1954). The R chooses one of five alternative words to complete a sentence. Twelve items, administered orally. (The respondent could also read the sentences and choices in his own booklet.)

3. Raven Progressive Matrices (Raven, 1956). The R chooses one of 4-8 designs to fill in a missing corner of a visual matrix. Ten items.

4. Digit Symbol Substitution (WAIS). A one-minute numbers-to-symbols coding form.

5. Information (WAIS). The R answers 11 questions in open form. Example: "What is a thermometer?"

6. Ammons Quick Test (Ammons and Ammons, 1962). The R selects one of four pictures corresponding to a word read by the interviewer. The 44 items were administered differently from manual recommendations, in that each respondent was given all items, regardless of how many he failed.

7. Picture Order (Hagen, 1967). A short picture panel is exposed for four seconds, after which the R must identify the position of a cue picture of the panel. 12 trials.

HYPOTHESES

One possible hypothesis about the effects of the race of the interviewer and race of respondent on any measure is simply that there will be no effects due to interviewer race, respondent race, or their interaction. Because there is little evidence to the contrary, such a hypothesis is made with regard to the projective and behavioral motivation scales also, excepting anxiety. Interview anxiety is hypothesized

60

to be affected by interviewer race as follows: for white respondents, a black interviewer is much less common than a white interviewer, and may elicit uneasiness or hostility, hence anxiety. Thus, interview anxiety is higher for whites with black interviewers. For black respondents, neither race of interviewer is unusual, but contact with a white interviewer may raise anxiety, as past research shows. Thus an interaction effect occurs, with race-matched groups having lower interview anxiety. This effect is not hypothesized for the more chronic past test anxiety.

Several investigators (Roen, 1960; Sarason and Mandler, 1952; Spielberger, 1958) have found that for moderate-to-difficult tasks and in somewhat arousing situations such as a household test, high anxiety depresses task performance. Other researchers (Burgess and Hokanson, 1964; Katz and Greenbaum, 1963; Lucas, 1952) have obtained results supporting an inverted-U efficiency-anxiety relationship. The household interview is a most unusual occurrence for the respondents; in addition, difficult tasks clearly of an intelligence-test type, on which most respondents fail some items, are included. Therefore, it is hypothesized that the average anxiety level is high, and only the high-anxiety end of the inverted-U curve occurs. It is therefore predicted that the race-matched groups, with lower interview anxiety, score higher on the intelligence tests.

RESULTS

From records of the number of eligible respondents contacted by each interviewer, and of the number of respondents who refused to be

61

interviewed, refusal rates were computed. The rate was affected by both interviewer and respondent race: white interviewers were refused somewhat less often (10.9%) than blacks (16.6%), and black respondents refused less often (10.2%) than whites (16.6%; $Z=2.14$, $p \leq .05$). The rates for each sub-group are shown in Table 2. That no more refusals were elicited by opposite-race interviewers is contrary to expectation, but encouraging with regard to the representativeness of the samples.

Of the demographic facts, only the mean reported respondent education (number of grades completed) was apparently affected by interviewer race. The sample interviewed by whites averaged 11.32 grades; that of blacks, 11.91 grades. This difference is small but significant, with $t=2.10$, $p \leq .05$, and was not expected. If, compared to the white interviewers, the black interviewers elicited more refusals from lower-educated respondents than from higher-educated respondents, such an education difference would occur. Another possible cause is an over-reporting bias: it is possible that both the black and white interview groups have the same average educational level, but the respondents (of both races) reported higher levels to the black interviewers. A crude test of this was made by comparing reports of spouse's and father's education for the two samples, on the assumption that if self-education was over-reported, these would be also. Although the level of both spouse and father's education is higher in the black interviewers' group, the differences are not significant. It is therefore concluded that the two samples do vary, probably due to sampling error, in actual educational attainment, a result which must be taken into account when considering interviewer race effects on the intelligence measures.

Motivation. A. Projective. White interviewers elicited longer responses to the four projective (P1-P4) and two semi-projective (SP1-SP2) items than did black interviewers. Table 3 included these means as well as all others derived from coding of the projective measures. In general, the black interviewers, despite obtaining shorter records, elicited significantly more positive achievement imagery and less negative imagery than did white interviewers. Neither the quantity nor the content of the responses showed any variation due to race of respondent, or an interactive effect of respondent and interviewer race.

B. Objective. Analyses of variance on the objective personal efficacy and achievement scale scores showed no significant main effects or interactions of interviewer and respondent race on either variable, as was expected. (See Tables 4 and 5.)

Although the two anxiety scales were parallel in items and response types, their means were quite different, as is reported in Table 6. The scales correlated .3935, but were influenced by respondent race differently: the black-white means for interview anxiety, 3.057 and 3.952, respectively, were significantly different, with $t=3.53$, $p \leq .01$, while those for past test anxiety were not. There was no interviewer race effect on the interview anxiety scale either on mean score or variance. (See Table 7.) This runs counter to the Katz (1964) and Baratz (1969) work suggesting that blacks especially are more anxious in the presence of opposite-race interviewers.

C. Behavior. The behavioral measures of motivation were examined on two ways. First, each respondent was given a score based on the number of times he chose the moderate, or achievement, alternative.

Second, the responses were assigned a code consistent with difficulty, from one for "easy" to four for "very hard." Analysis using the first, or achievement, scoring showed no significant effects due to either interviewer or respondent race, or their interaction. This is consistent with expectation and with results of the self-report motivation measures. Coding for difficulty, however, revealed several strong effects, shown in Table 8. On the choices administered after the first three intelligence tests in the interview, white interviewers elicited significantly more difficult responses. On those following the last two tests, there was no significant interviewer effect, but white respondents chose significantly more difficult responses than did blacks. Only on the digit [illegible] choice (administered first, with three rather than four alternatives offered) was there a significant interviewer-respondent interaction effect on the difficulty level chosen.

Examination of the group means on each measure reveals a consistent ordering, with white interviewers' means greater than blacks' for both respondent races, and white respondents' means greater than blacks' for both interviewer races. Only the low white interviewer-white respondent cell on a digit span choice deviates from this pattern. Further analysis (Table 9) shows that the interviewer differences arise from the black interviewers' having elicited more "easy" and less "hard" responses than did the white interviewers, on each of the five trials.

Intelligence. Mean scores on all seven intelligence tests were affected by respondents' race, with whites scoring higher. Values of the t-statistics ranged from 2.84 (Picture Order) to 8.20 (Raven

Matrices), all significant at $p \leq .01$. Means of four of the seven also varied significantly with interviewer race, with black interviewers eliciting higher scores (Table 10). Analyses of variance on the intelligence measures showed no significant interviewer-respondent race interaction effects.

Because the differences in intelligence score means between interviewer groups might be caused wholly by their between group differences in mean educational levels, analyses of covariances with education as covariate were performed on all tests. The results are in Table 11. Only for the Sentence Completion, Raven, and Information tests does a significant interviewer race effect remain.

DISCUSSION

The results are notable both for the interviewers' effects upon responses and the lack of interaction of interviewer and respondent race. Interactions were predicted in three major areas: refusal rates, anxiety, and (through anxiety) intelligence scores. Although no significant interactions occurred, there were main interviewer race effects on refusal rates and intelligence scores.

The absence of interactions is welcome from a practical point of view, for it obviates the need to match interviewers and respondents by race in this type of interview. Theoretically, however, it is somewhat perplexing, If interactions were the rule, the concept of "race" for purposes of interview research could be reduced to the much simpler psychological concepts of "same" and "different." Uniform

65

reactions to black and white interviewers by respondents of both races necessitate conceptualization of race into "black" and "white," concepts much less explicable and understandable psychologically than "same" and "different." Moreover, a same-different dimension holds potential for extension to work on sex, age, nationality, and other demographic differences, while the black-white does not.

Over the course of the interview, the black interviewers elicited shorter TAT protocols; more positive and less negative achievement imagery; easier choices of IQ items; and higher intelligence test scores from both black and white respondents. There were no significant interviewer race effects on the self-report motivation scores or on anxiety. While these results are certainly not as expected, they can with some effort be interpreted as a whole.

If one interviewer group were generally perceived as more evaluative, perhaps more critical, than the other, that group might be more likely to elicit responses seen to be socially desirable by the respondents, and be more anxious about pleasing the interviewer or appearing "correct." Such responses could be interpreted to include:

1. long TAT protocols, to exhibit willingness and ability to be imaginative and communicative;

2. realistic projective scores without fantastically good outcomes, yeilding less positive achievement imagery (high scores depend primarily on success, long-term plans, and inventiveness, not on plausibility) and more negative imagery;

3. "hard" choices on the motivation choice items;

4. a. higher interview anxiety, brought about by the interviewers'

66

evaluative stance, or

b. denial of anxiety as a socially undesirable response, perhaps giving a bimodal, high-variance distribution;

5. lower intelligence test scores, due to higher anxiety.

The white interviewers did in fact elicit such a response pattern, except for the interview anxiety difference. That this measure did not vary with interviewer race, especially given the other results, is a problem. The measure could be insensitive, or it could be too focused upon reactions to the intelligence tests, rather than on the interview as a whole.

In summary, these results, coupled with the white interviewers' lower refusal rate, suggest that the white interviewers were perceived as more demanding or authoritative, more evaluative than were the black interviewers, by both black and white respondents. This interpretation may be consistent with a finding by Marquis (1971) that, in a survey interview of black and white respondents about personal attitudes, white interviewers engaged in more "behaviors" (including actual questions, probes, feedback, etc.) per interview than did the black interviewers, suggesting, perhaps, that the white interviewers presented a more dominating presence.

The results also suggest that further research on interviewer race effects might be fruitfully carried out in an interview-methodology context similar to that used in studies of "task-oriented" and "rapport" interview approaches, in which the role played by the interviewer is a major independent variable. One feature of these

6.7

studies which would be of great use in future work is the direct measure of respondent reaction to the interview; e.g., "How friendly was he?" Other possible research directions include repeated testing of respondents with varying interviewer races; attempting to duplicate the obtained effects with selectively trained interviewers of one race work in areas not so Northern or urban as Detroit; further work on measures of anxiety and their relation to other factors; and of course, replication of the basic results.

TABLE I

THE SAMPLE: NUMBER OF INTERVIEWS OBTAINED, BY RACE OF INTERVIEWER AND RACE AND SEX OF RESPONDENT

Respondent Race		Black		White	
Respondent Sex		Male	Female	Male	Female
Interviewer Race	Black	40	53	38	35
	White	52	43	48	56

TABLE 2

REFUSAL RATES*: RACE OF INTERVIEWER AND RACE OF RESPONDENT

Respondent Race		Black	White
Interviewer Race	Black	13%	20%
	White	7%	14%

*Calculated as number of eligible respondents who refused to be interviewed, divided by the total estimated number of eligible respondents

TABLE 3

MEAN SCORES ON PROJECTIVE MOTIVATION MEASURES, BY INTERVIEWER RACE

Type	Variable	White Interviewers	Black Interviewers	t
Quantity	Total Words	223.60	200.96	2.832**
Simple Achievement	P1 ach.	2.52	2.66	
	P2 ach.	2.18	2.61	-2.316*
	P4 ach.	4.68	5.02	-2.457*
	SP1,SP2,P3 ach.	1.13	1.42	-1.968*
	Total	10.53	11.72	-3.181**
Positive Components of Achievement	Mastery	1.41	1.46	
	Social comparison	0.27	0.24	
	Social Approval	0.28	0.28	
	Autonomy	0.06	0.09	
	Future Orientation	1.16	1.39	-2.464*
	Personal Efficacy	2.28	2.81	-4.820**
	Positive Outcomes	2.61	2.95	-3.423**
	Positive Activity	1.89	1.84	
	Total	9.97	11.06	-3.455**
Negative Components of Achievement	Fear of Success	0.18	0.08	+2.148*
	Fear of Failure	0.26	0.17	
	Hostile Press	0.10	0.04	+1.980*
	Blocks	0.72	0.61	
	Total	1.17	0.82	+2.002*
Power	Power	0.81	0.80	

$*p \leq .05$

$**p \leq .01$

Note: The t's are not independent, since all scores were derived from the same TAT data.

71

TABLE 4

MEAN SCORES ON OBJECTIVE PERSONAL EFFICACY AND ACHIEVEMENT SCALES, BY INTERVIEWER AND RESPONDENT RACE

Interviewer Race	White		Black	
Respondent Race	White	Black	White	Black
Personal Efficacy	2.99	2.65	2.82	2.78
Achievement	23.96	24.55	24.66	24.37

72

TABLE 5

ANALYSES OF VARIANCE ON PERSONAL EFFICACY AND ACHIEVEMENT SCALES: INTERVIEWER RACE AND RESPONDENT RACE

	Mean Squares				F-Ratios		
	Interviewer Race (A) (1 df)	Respondent Race (B) (1 df)	A X B (1 df)	Error (360 df)	A	B	A X B
Personal Efficacy	0.000	3.657	2.839	1.320	0.000	2.770	2.151
Achievement	5.713	3.854	14.161	19.338	0.295	0.199	0.732

Note: No significant effects

TABLE 6

PAST TEST AND INTERVIEW ANXIETY MEANS AND VARIANCES, BY INTERVIEWER AND RESPONDENT RACE

Interviewer Race	White		Black	
Respondent Race	White	Black	White	Black
Past Test Anxiety Mean	5.93	5.37	5.94	5.86
Variance	2.93	2.93	2.84	2.62
Interview Anxiety Mean	3.95	3.19	3.96	2.96
Variance	2.63	2.45	2.56	2.05

TABLE 7

ANALYSES OF VARIANCE ON ANXIETY SCORES: INTERVIEWER RACE AND RESPONDENT RACE

	Mean Squares				F-Ratios		
	Interviewer Race (A) (1 df)	Respondent Race (B) (1 df)	A X B (1 df)	Error (350 df)	A	B	A X B
Past Test Anxiety	6.341	7.017	1.861	7.777	0.815	0.902	0.239
Interview Anxiety	0.704	73.313	2.678	5.805	0.121	* * 12.630	0.461

* * p ≤ .01

TABLE 8

MEAN DIFFICULTY SCORES ON FIVE MOTIVATION - CHOICE MEASURES, BY INTERVIEWER - RESPONDENT RACE GROUPS

Interviewer Race	White		Black		
Respondent Race	White	Black	White	Black	
Digit Span Choice	2.10	2.35	2.11	1.96	1,3
Sentence Completion	3.18	3.11	2.84	2.69	1
Raven	2.99	2.84	2.61	2.44	1
Ammons	2.96	2.46	2.88	2.44	2
Information	2.80	2.33	2.67	2.00	2

1. Interviewer race effect significant, $p \leq .01$
2. Respondent race effect significant, $p \leq .01$
3. Interviewer X respondent race interaction significant, $p \leq .01$

TABLE 9

PERCENT OF "EASY" AND "HARD" CHOICES ON MOTIVATION CHOICES, BY INTERVIEWER RACE GROUPS

Interviewer Race	Percent "Easy" White	Percent "Easy" Black	Percent "Hard" White	Percent "Hard" Black
Digit Span	16.1	21.6	37.7	25.3
Sentence Completion	8.0	13.9	48.7	29.5
Raven	13.6	24.7	40.6	25.9
Ammons	14.8	17.6	34.1	28.2
Information	18.2	34.1	33.0	22.4

TABLE 10

INTELLIGENCE TEST MEANS, BY INTERVIEWER RACE

Interviewer Race	White	Black	t
Digit Span	4.88	5.27	2.329*
Sentence Completion	10.51	11.15	2.616**
Raven	5.46	6.05	2.267*
Ammons	37.91	37.69	
Information	6.06	7.08	2.778**
Picture Order	7.90	8.36	
Digit Symbol Substitution	30.41	30.77	

* $p \leq .05$ ** $p \leq .01$

TABLE 11

ANALYSES OF COVARIANCE ON INTELLIGENCE TEST SCORES: INTERVIEWER RACE X RESPONDENT RACE, EDUCATION AS COVARIATE

	Mean Squares				F - Ratios		
Test	Interviewer Race (A) (1 df)	Respondent Race (B) (1 df)	A X B	Adjusted Error	A	B	A X B
Digit Span	6.919	6.710	0.002	2.086^{1}	3.317	3.217	0.001
Sentence Completion	15.500	18.607	6.756	3.240^{1}	4.784*	5.743*	2.085
Raven	20.679	184.475	9.270	4.06^{1}	5.093*	45.434**	2.283
Ammons	22.764	378.728	3.870	12.836^{2}	1.773	29.505**	0.302
Information	29.319	36.823	3.938	4.123^{2}	7.110**	8.930**	0.955
Picture Order	5.934	11.453	12.378	3.883^{2}	1.528	2.950	3.187
Digit Symbol Substitution	23.675	1129.823	5.387	55.992^{1}	0.423	20.178**	0.096

1 355 df
2 165 df

* $p \geq .05$
** $p \geq .01$

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APPENDIX 5

TWO METHODOLOGICAL STUDIES:
(1) PUBLIC VS. PRIVATE RESPONSES TO TEST ANXIETY, AND
(2) EXPLICIT VS. IMPLICIT EXPECTATION SETTING
ON PERFORMANCE IN THE DIGIT SYMBOL SUBSTITUTION TEST

APPENDIX 5

Incorporated in the Detroit survey were investigations of two strictly methodological issues, involving the administration of the Test Anxiety Questionnaire items and the motivational portions of the Digit Symbol Substitution Test.

Because it was inappropriate for one respondent to perform the same task twice under different sets of instructions, the varying administration methods were placed in the two forms (A and B) of the questionnaire. Each form was given to a random half of the sample.

Public Vs. Private Responses to TAQ

The "past test anxiety" portion of the TAQ was administered in a "public" (Form A) and a "private" (Form B) condition. Both groups of respondents checked three-point scales in their Respondent Booklet as the interviewer read each question aloud. Those in the Form A group were instructed to tell their answers to the interviewer, who then marked the response on the main interview form. The Form B group were directed not to tell their answers to the interviewer, but only to mark them down in the booklet. If a Form B respondent did announce the response, he was told, "Please don't tell me your answer," by the interviewer. After he completed all the items, the Form B respondent sealed his answer sheet in an envelope for the interviewer.

The two administration methods were included primarily because of the somewhat embarrassing nature of the questions. We hoped that the "private" method would reduce any bias to choose the "socially desirable" (or low anxiety) response. Thus we predicted generally higher mean scores for the B group, possibly affected by the race of respondent or interviewer, or both.

Accordingly, an analysis of variance was done on the past test anxiety scores, with interview form (public or private), interviewer race, and respondent race and sex as factors. The only significant main effect was that of sex ($F = 10.66$; 1, 345 degrees of freedom, $p \leq .01$); there were no significant interactions. Although the mean for the private condition is higher than that for the public (5.88 to 5.70, $t = 2.82$), the difference is not at all significant. Thus, it appears that manipulation of the instructions and administration methods had no effect on the responses.

Explicit Vs. Implicit Expectations In DSST Performance

The motivation portion of the DSST involved performance on tasks of varying difficulties. A base rate of performance was established on form DSS, on which each respondent worked for 60 seconds. After work on an intervening DSS task, the respondent was given a form of the test that was longer than any respondent could do in 60 seconds (L, for long). Form A of this long test presentation, we called the condition of *explicit* expectation setting. The instructions for the explicit condition were as follows: "On the first form you did (form DSS), you did about ____ blocks in one minute (R's actual rate given). This form is 108 blocks long. See if you can finish it in one minute." These instructions contrast to the condition of *implicit* expectation setting run in Form B which did not tell the respondent either his base rate or the length of form L. Similarly, in the explicit condition, the instructions for the subsequent moderate-risk task read: "On the first form, as I said, you did ____ blocks in a minute. This form is ____ blocks long (a figure based on R's DSS performance, and within three points of that performance). See if you can finish it in one minute." In the implicit condition, the interviewer said only, "Here is another form. See if you can do it in a minute."

Thus, in the explicit condition, respondents were given explicit, numerical comparisons between their past performance and the tasks to be done. The respondents in the implicit condition had only their memory of past performance and the appearance of the new coding forms on which to base any evaluation of difficulty. Therefore, it was predicted that those respondents receiving the explicit instructions would perceive the tasks' difficulty both more accurately and more uniformly than would the other respondents.

To test this hypothesis, all respondents were divided into high and low achievement-oriented groups on the basis of their risk preference choice after the form of the DSST. Respondents were considered highly achievement-oriented if they chose a moderate form and low achievement-oriented if they chose an easy form. The difference between rate of performance on moderate form and rate on long form was computed (M-L). This difference, according to traditional theory of achievement motivation, should be greater for highly achievement-oriented respondents than for low. Since the performance differential results from a motivation differential which in turn depends upon perceived difficulty of the task, it was predicted that the difference between high and low achievement-orientation respondents on M-L is greater with explicit instructions than with implicit conditions. The predictions and results are given below in tabular form.

Table A5.1

Predicted M-L Means for Respondents
in Explicit and Implicit Condition

	Achievement Orientation		
Condition	High	Low	Total
Explicit	++	0	++
Implicit	+	0	+
Total	++	0	

Table A5.2

Actual M-L Means for Respondents in Explicit and Implicit Condition

	Achievement Orientation		
Condition	High	Low	Total
Explicit	1.0	2.0	1.6
Implicit	2.2	1.8	2.5
Total	1.5	2.2	

As is clear from Table A5.2, making the instructions explicit did not have the desired effect, and indeed had no effect at all on the mean scores. In addition, the pattern and magnitude of correlations of M-L with other motivation measures is no different for explicit and implicit groups. Thus, manipulating the explicitness of the DSST instructions to help the respondents more accurately perceive task difficulty had no effect on their performance.

APPENDIX 6

SOME PROVOCATIVE RESULTS
WITH THE PICTURE ORDER INCIDENTAL TEST

APPENDIX 6

SOME PROVOCATIVE RESULTS WITH THE PICTURE ORDER INCIDENTAL TEST

In analyzing the Detroit survey intelligence data, we found evidence that one test, the Picture Order Incidental, behaved rather differently from the other intelligence tests. In initial analyses, the Picture Order Incidental (POI) scores correlated positively with other IQ tests and education in black and low-status groups, but not in white and high status groups. This result seemed to us to merit further investigation, even though the varying correlations and administrative difficulties of the test eliminated it from use in a national survey.

Background

The Picture Order Incidental Test was adopted from procedures that Hagen has used to measure incidental, or task-irrelevant, recall in normal and retarded children. Past research with the test (Maccoby and Hagen, 1965; Hagen, 1967; Hagen and Sabo, 1967; Druker and Hagen, 1969; Hagen and Huntsman, 1969) has supported the Broadbent information processing model (1958). This model states that developmental improvement in certain cognitive processes such as short-term memory processes such as short-term memory results in part from improvement in the ability to attend to certain cues and ignore others. Exclusion of task-incidental information occurs when the task demands are greater than the individual's information-processing capacity.

Accordingly, the Picture Order Test includes two memory tasks -- "central", and "incidental". The respondent is shown a panel of three to seven pictures; each picture has a drawing of an animal and a household object. After four seconds, the panel is removed and the respondent is asked to indicate (by pointing to an empty panel of the same length) where the picture showing a certain object was. The instructions tell the respondent explicitly that the location of the objects, not the animals, is the information to be recalled. This, then, is the "central" task.

89

After twelve such trials have been completed, the respondent is given a panel containing only the household object drawings, and asked to match to each one the animal with which it was always paired throughout the test. How many pairs the respondent matches correctly is his "incidental" score (0-6).

The length of the panels (up to seven pictures) and exposure time (four seconds) were designed to make the recall task so difficult as to require most respondents' entire attention. Only 24 of 192 respondents were correct on all or all but one of the twelve trials.

Analysis

We suspected from our initial results that either race or status background, or both, were important variables on which to divide the sample in further analysis of the Picture Order Incidental tests. Both because these two variables are confounded in our sample (there are few blacks from high status background and few whites from low status background), and because the Picture Order Incidental test was administered to only half of our sample, the separation of these two variables led to very small groups. Nevertheless, the results emerging from our analyses of these groups differentiated by both race and status background seemed fairly clear. Therefore we kept the two distinctions in all analyses. The groups were divided into high and low status background groups according to the following criterion: all respondents who reported that their fathers were absent from their homes while growing up or whose fathers had occupations that are classifiable in the three lowest status groups in Duncan's coding of status (1961) were considered respondents from low status background; all others were from high status background.

First the four groups are compared on their absolute performance on POI, especially in contrast to the groups' performances on the Picture Order Central test, and the Sentence Completion test which we had adopted as the single best indicator for our heterogeneous sample of what is standardly measured in intelligence tests.

Table A6.1

Mean Scores on Picture Order Incidental, Picture Order Central and Sentence Completion Tests For Race x Status Background Groups

	Test					
	Picture Order Incidental		Picture Order Central		Sentence Completion	
Group	Mean	(N)	Mean	(N)	Mean	(N)
Black:						
Low Status Background	2.74	(66)	7.36	(66)	10.15	(120)
High Status Background	3.08	(36)	8.25	(36)	10.57	(68)
White:						
Low Status Background	2.67	(21)	7.29	(21)	10.34	(37)
High Status Background	2.63	(69)	8.96	(69)	11.59	(140)

T-tests comparing pairs of means within racial groups in Table A6.1 indicate that only the following are significant: the status difference on POC within whites ($P < .01$); the status difference on POC within blacks ($P < .05$); and the status difference on SCT within whites ($P < .01$). No other differences are significant except that high status whites are higher than either black group on the SCT ($P < .01$). These results point up the often noted status difference in standardly measured intelligence (SCT), but it also highlights the status difference in a measure of central attention (POC). Race differences seem minimal by comparison. The crucial result, however, is that the race-status groups do not differ in incidental learning ability (POI).

How do we explain the inconsistency of a difference between groups on two measures (SCT, POC), and no difference on the third (POI)? One explanation is that those lower in measured intelligence (SCT or POC) are lower on these tests because they attend to incidental cues in learning; hence, they score relatively high on POI. With this explanation, one might expect that those lower on POI would be higher on SCT or POC. The results testing this hypothesis are in Table A6.2. It is clear from that table that this hypothesis can be rejected. The striking result is that for low status background groups, both white and black, there is a significant positive association between our best assessment of standardly measured intelligence (SCT) and the incidental learning skill. This led us to explore possible correlations of this test (POI) with other measures of attainment and achievement. The results of this exploration that proved provocative are reported in Table A6.3, in which we see that for the lower status background group there are consistent positive associations (significant only for blacks) between POI and education, and between POI and the Raven Progressive Matrices. These results are not present for the groups from high status background. The Raven Progressive Matrices test is described in Appendix 2; in brief, it reflects the person's ability to scan a set of abstract pictorializations and then choose one of a number of alternatives that best completes the design or sequence. Generally, what is involved is the capacity to use more than one cognitive category for cataloging the set, sometimes breaking a strong set established on a preceding trial or suggested by one of the alternatives. The results in Table A6.3 suggest that for groups from lower status backgrounds whatever is measured in the POI is involved in their going on to higher levels of education, and perhaps is coordinated to a set-breaking cognitive skill. This pattern of results thus suggests that the POI does measure something different in the cognitive repertiore of the groups from low status background in comparison to the groups from high status background.

That a test like POI correlates with education in low status background groups was especially intriguing to us, since success in school would seem to depend not on incidental learning skills but on attentional skills enabling

Table A6.2

Correlation of Picture Order Incidental Test with Picture Order Central Test and Sentence Completion Test (by Race-Status Groups)

Group	(N)	POC	SCT
White:			
Low Status Background	(21)	-.01	.41*
High Status Background	(68)	.11	.18
Black:			
Low Status Background	(66)	.17	.31**
High Status Background	(36)	-.12	.16

*p < .05.

**p < .01.

Table A6.3

Correlation of Picture Order Incidental Test with Ravens Progressive Matrices and Education (by Race x Status Groups)

Group	(N)	Ravens Progressive Matrices	Education
White:			
Low Status Background	(21)	.33	.29
High Status Background	(68)	.00	-.04
Black:			
Low Status Background	(66)	.39**	.39**
High Status Background	(36)	-.11	.01

*p < .05.

**p < .01.

people to ignore distractions. Was POI directly related to education in low status background groups, or only through its relation to the Sentence Completion test? Table A6.4 shows a regression on education, including both measures of intelligence plus demographic variables as predictors, in the groups from high and low status backgrounds separately. POI remains a significant predictor of education over and above SCT for low status background respondents; for high status background respondents, it is an insignificant predictor, but a negative predictor, a fact more aligned with theoretical expectation.

Table A6.4

Regression on Education with SCT, POI as Predictors
Along with Race, Sex, and Age in Groups
High and Low in Status Background

	Group					
	Low Status Background (87)			High Status Background (104)		
Predictor	Beta	R^2	t	Beta	R^2	t
Sentence Completion Test	.53	.30	5.86**	.42	.17	4.51**
Picture Order Incidental	.19	.05	2.08*	-.12	.02	1.23
Race	-.12	.02	1.36	-.01	.00	.14
Sex	.00	.00	.03	-.09	.01	.96
Age	-.13	.03	1.53	-.05	.00	.54

*$p < .05$.

**$p < .01$.

94

Discussion

The Picture Order Incidental test positively relates to intelligence and educational attainment in respondents from lower status background; it does not relate to these variables in respondents from higher status background. How do we explain these results?

Low status background respondents in Detroit, especially blacks, probably came primarily from a slum or ghetto environment in a city or town, or from a rural area with its own intact sub-cultural milieu. Many sociologists (e.g., Lewis, 1968; Gans, 1968) believe that disadvantaged environments such as the ghetto often have a "culture of poverty", with norms of behavior and aspiration differing from those of the mainstream culture. In such a culture, the middle-class goals of educational and occupational success might not be central. Looking at ghetto socialization this way, we would say that the mainstream, middle-class culture, when it does have a socializing influence on the ghetto residents by formal education, the mass media, and other institutions, may be secondary -- if not "incidental". The culture of poverty would be a central input; "middle-class culture" the incidental input.

Since our measure of "success" -- educational attainment -- is the goal of the mainstream culture, the ghetto resident who attends to this goal, then, is in fact attending to secondary, or incidental influences. Thus, to succeed on middle-class terms, he must attend to incidental cues.

How about the whites from lower status backgrounds in Detroit? Most of these people might be expected to show the pattern we suggest for blacks from city ghettoes or segregated rural milieus. The whites with low status backgrounds often come from an urban sub-culture that until recently has remained fairly intact (such as the Polish-American settlement in Detroit) or from a poor background in Appalachia without too much input from the dominant middle-class scene. Either of these backgrounds might qualify as cultures of poverty. Although Duncan (1968) has pointed out that race is still such a major block to opportunity that it is easier to think of blacks as being from a "culture of poverty" than whites, the background of the whites in our sample does seem to qualify as culture of poverty.

95

Now consider a member of either race from a middle-class background. For the most part, the socializing influences upon him -- school, family, peers, job -- all present a unitary norm, of status and success. To achieve these goals, he must block out distracting cues when necessary. In addition, his formal education teaches him to focus only on the central task ("Do what the teacher says", "Follow the instructions"), even when it does not require his full attention.

Thus, incidental learning for the person from a low status background may be an important skill in itself. It is positively related to usual measures of success, perhaps because it is ultimately reinforced by the secondary culture. For those from the middle-class, incidental learning is never reinforced by any cultural group.

In addition to this somewhat sociological interpretation of the POI results, more psychological speculations are possible.

Let us start with the fact that there is higher measured intelligence on the SCT and POC for higher status background groups than for lower status background groups, but no differences between the groups on the POI. Could it be that the respondents from economically poor backgrounds are scoring lower in these intellectual achievement measures because of some interferences with attentional skills required of these tests? These interferences could derive from prenatal nutritional deficits, birth difficulties accounting for minimal brain damage, or early learning experiences that do not reinforce basic attentional orientations. If that were so, some other type of intellectual skill like the capacity to scan incidental cues, or the ability to think divergently about a problem or task, might represent for this group an alternative and more reinforced route to cope with information. Children with "perceptual deficits" who master reading, for example, often do so by routes uncommon to the standard focussed procedure. Within this set of speculations, incidental learning does not merely reflect the failure of attention in groups from low status backgrounds but their active intellectual capacity to scan the field for cues that may be potentially relevant. On the other hand, so these

96

speculations may go, incidental learning for higher status background groups may indeed represent failures at attention. Further amplifying this position, we find that POI is more highly correlated with the Raven Progressive Matrices, a test requiring that a person utilize more than one mental set in solving the problem, in low status background groups than in high status background groups. This would be further evidence that POI measures a positive intellectual function for the low status background group. Furthermore, the incidental learning task is an effective predictor of education in the low status background groups but not in the high status background groups.

Whether one adopts the more sociological explanation offerred or the more psychological one, or whether one accepts or rejects both, the data from these analyses represent very important clues about potential differences in the significance of intellectual functioning and measurement in groups from different social backgrounds. Indeed, we find it one of the most exciting results uncorked in our survey.

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